TG GEMINI

OWNER HANDBOOK

Sedan, Wagon & Panel Van

(Including DIESEL)

Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss .....

Address .....

Town ..... Phone .....

State & Postcode .....

Reg. No. .....

Model Name .....

Vehicle Identification Number (V.I.N.) .....

Eng. No. .....

Odometer Reading .....

Selling Dealer's Stamp & Signature .....

Date of Acquisition .....

Pre Delivery Checklist ..... Page 117

Delivery Certificate ..... Page 118

Index ..... Page 146

Part No. 92019628

December 1983

This handbook contains important information necessary for the good performance and maintenance of the vehicle. Please leave it in the vehicle at the time of resale to assist the new owner.

New Vehicle Warranty

GENERAL MOTORS-HOLDEN'S SALES PTY. LTD.

(INCORPORATED IN VICTORIA)

GENERAL MOTORS-HOLDEN'S SALES PTY. LIMITED

(INCORPORATED IN VICTORIA)

New Vehicle Warranty

GENERAL MOTORS-HOLDEN'S SALES PTY. LTD. HEREBY WARRANTS THAT IT WILL MAKE GOOD, WITHOUT CHARGE, ANY DEFECT WHICH APPEARS IN THE VEHICLE IDENTIFIED IN THE VEHICLE IDENTIFICATION CERTIFICATE FOUND ON THE INSIDE OF THE FRONT COVER.

Provided

1. the defect has been notified to an authorised GMH Dealer or Service Dealer:
   (a) before the vehicle has travelled a distance of 20,000 km, or:
   (b) within 12 months of the date of delivery of the vehicle to the first retail purchaser (or in the case of a Demonstrator vehicle within 12 months of the date when it was first placed into service by the Dealer)

   whichever comes first, and

2. the vehicle has been returned to an authorised GMH Dealer or Service Dealer

And

3. the Dealer has determined that the defect complained of *is* one of material or workmanship and *is not* caused by:

   (a) misuse or abuse of the vehicle such as by racing, rallying, overloading, etc. or by neglect
   (b) operation of the vehicle after it is known to be defective
   (c) accident or deliberate act
   (d) atmospheric fallout or flood, hail, salt, etc.
   (e) failure to carry out proper maintenance service
   (f) alteration or modification of the vehicle
   (g) the fitting of parts or accessories not marketed by GMH
   (h) any work carried out on the vehicle by someone other than an authorised GMH Dealer or Service Dealer,

BY THE DEALER (or as otherwise decided by GMH Sales) MAKING GOOD THE DEFECT BY REPAIR OR, AT THE OPTION OF GMH SALES, BY REPLACEMENT.

Excluded from this Warranty are

- defects in tyres or tubes (these being warranted by their manufacturers), and services such as engine tuning, brake adjustment, replacement of air and oil filters, etc. which are required as part of normal vehicle maintenance.

This Warranty applies only to vehicles operated in Australia and is given to the person who is entitled to possession of the vehicle whether as owner lessee or otherwise and is given in addition to all rights conferred by law on that person.

Owners of vehicles operated outside Australia should consult their local dealer regarding the warranty applicable to their vehicles.

Notice to Customers

No GMH dealer or other person is authorised or permitted to give or make any statement assertion or undertaking in relation to the quality performance characteristics descriptions or fitness for any purpose of any GMH product or in connection with the supply of any GMH product, which is at variance with any written statement assertion or undertaking on any of these subjects given or made by General Motors-Holden's Limited or General Motors-Holden's Sales Pty. Ltd. in its published sales literature, and neither company accepts any liability for any such unauthorised action.

General Motors-Holden's Limited and General Motors-Holden's Sales Pty Ltd have franchised dealers in many parts of Australia for the sale of service parts and the provision of service to owners of GMH's products. Every endeavour is made to ensure that such dealers carry adequate stocks of service parts, and are equipped to provide satisfactory service, but neither General Motors-Holden's Ltd. nor General Motors-Holden's Sales Pty. Ltd. makes any promise that such parts or service facilities will be available, or available at any specific location or any particular time.

GMH Parts and Accessories Warranty

General Motors-Holden's Limited warrants in respect of GMH parts and accessories required as replacement parts, that it will make good by repair or at its option by replacement any defect occurring in any such GMH parts and accessories within 3 months from the date of acquisition or in the case of a GMH part or accessory which has been installed in a vehicle by a GMH Dealer or Service Dealer before such vehicle has travelled a distance of 6,500 kms from the date of installation, whichever first occurs.

A Message from GMH

Thank you for choosing Holden. Your new Gemini is the product of many years research and planning. We are very pleased and proud of the result—as we are sure you will be.

To understand your new vehicle fully, please take the time to read through this handbook and keep it in the vehicle at all times for quick reference.

Full understanding of your vehicle's performance, warranty and maintenance procedures will add greatly to your enjoyment.

On behalf of all here at GMH, may we wish you and your Gemini many years of happy motoring.

This handbook applies to all TG Gemini models including Diesel, and explains all equipment including options. You may therefore find reference to some equipment not installed on your vehicle.

HOLDEN GMH

See inside back cover for ACCIDENTS (including medical).

SECTION 1 — **Getting to know your Gemini**
Running In, Fuel Economy Tips, Safety Checklist, Diesel Engines, Keys and Locks, Mirrors, Windows, Seats, Seat Belts, Child Restraints.
Page 3

SECTION 2 — **Starting and Operating**
Steering Column Controls, Starting and Driving, Transmission and Floor Controls, Brakes, Instrument Panel Controls and Dials, Radio, Ventilation, Air Conditioning.
Page 29

SECTION 3 — **Emergencies, Safety and Emission**
Spare Wheel Storage, Wheel Changing, Overheating, Diesel Sedimentor, Towing, Loading, Push Starting, Starting with Jumper Lead, Emission Control Systems.
Page 55

SECTION 4 — **Owner Relations and Authorised GMH Dealers**
Owner Relations, Owner Relations Managers, Authorised GMH Dealers.
Page 73

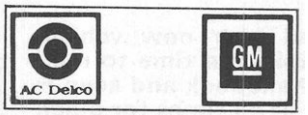
SECTION 5 — **Specifications**
Serial Numbers, Model Identification, Vehicle Dimensions, Engine Data, Capacities, Clearance and Settings, Fuses, Headlamps and Bulbs.
Page 85

SECTION 6 — **Appearance, Maintenance and Service**
Caring for your Gemini, Washing and Cleaning, Service and Maintenance, Oil, Cooling System, Lubricants, Tyres, Maintenance Plan.
Page 93

When it comes to servicing, remember that a GMH Dealer has the trained personnel and specialised equipment to correctly service your vehicle.

For the proper maintenance and performance of the vehicle use only quality General Motors parts which are identified by one of these trademarks.

The use of parts, additives or treatments other than those marketed by General Motors may be detrimental to your vehicle and may void your New Vehicle Warranty.



All illustrations and specifications contained in this handbook are based on the latest product information available at time of publication approval. The right is reserved to make changes at any time, without notice, in prices, colours, materials, equipment, specifications and models and to discontinue models. Check with your Holden Dealer for complete information.

Section 1:

Getting to Know your Gemini

IMPORTANT

Fuel requirements — Petrol

Your Gemini is designed to run on standard grade fuel of at least 89 octane. Use of lower octane fuel will cause pre-ignition. If this occurs have your vehicle checked as it could damage your engine.

Diesel

If your Gemini is equipped with a Diesel engine use a Diesel fuel of 45 Cetane rating minimum.

Running In

These days, there's no need to follow a rigid running-in schedule. However, if you observe a few simple points during the first few hundred kilometres of driving, you will add to the vehicle's future performance and economy.

For the first 500 kilometres, don't go over 80 km/h. Up to 1500 kilometres, avoid driving at any one speed — either slow or fast — for any length of time.

Include some higher speeds in your driving. This helps prolong the life of parts and helps with fuel and oil economy. But never drive at high speed until the engine is thoroughly warm.

Full throttle acceleration is not recommended before the car has done 3000 kilometres.

Gemini Diesel

We know you will be anxious to give your new Gemini Diesel a trial run, but wait just a minute! First, please be patient and read this handbook. Read it carefully, even if you have had a diesel equipped vehicle before. Make quite sure you haven't missed anything.

The diesel engine is quite simple and straightforward really, and it has a number of advantages which make it particularly suited for Road Vehicles. Most vehicle users nowadays are familiar enough with the petrol engine, and the diesel is no more complicated or difficult to understand than this. Yet there have been certain misconceptions about it, including the notion that the fuel injection pump is a "box of tricks"—it is not!

The diesel engine has neither carburettor nor electrical ignition system. The fuel injection equipment which takes their place is totally enclosed and weatherproof, and this in itself is one of the greatest advantages of the diesel—even if left out in all weathers, damp or rain will not affect starting.

Another false idea is that, because the diesel runs on fuel oil, it will operate on creosote, sump drainings or other waste products. It will not! Fuel oil, like petrol, is produced by the refineries to a definite specification, for use in high speed engines such as the one in your new vehicle. To use any fuel other than of the brands of the well known companies is to ask for trouble. It is completely false economy, for consistent fuel quality and cleanliness are all-important in successful diesel operation.

THE ENEMY OF THE DIESEL ENGINE IS DIRT IN THE FUEL

This point deserves further explanation. The diesel is a hard-working engine that will give you long trouble-free service, as long as you keep the fuel really clean—not only free from large pieces of scale, sand or other dirt which the fuel filters or strainers will keep back, but free from dust, the fine dust which floats about in the air in dry weather. This fine dust is abrasive, and if it gets into the fuel it can cause rapid wear of the essential parts of the injection equipment. Your vehicle is fitted with a special filter which will prevent fine dust from passing into the pump—but let us explain why cleanliness is so important.

The fuel injection equipment comprises the injection pump itself, the injectors, and the filters. The pump and injectors are very carefully made, high-precision units, designed and built to perform a duty which is quite an arduous one. The pump is a sturdily built unit and has to supply the exact amount of fuel required to each cylinder—a droplet about the size of a pin's head for each firing stroke—and it operates at extremely high pressures. It has to inject hundreds of times a minute, and the amount of fuel must be under the instant control of the throttle or of the governor. The pump plungers are small and fit their housings perfectly—they have surface finishes and fits of the finest standard obtainable by modern engineering methods. since the pump operates in fuel oil, the wear of these precision parts is negligible and the pump will continue to do its work perfectly, unless dirt gets in. When that happens you can imagine

the effect of fine grit on those beautifully polished surfaces, when the fuel pressure is something like 12,500 kPa.

Now you will see how important it is to keep the fuel clean. Any abrasive dirt carried into the pump with the fuel will scuff and score the working parts—even the finest dust will damage the fine surfaces beyond repair. Worn components mean inefficient pumping, irregular deliveries to the various cylinders, bad running and poor starting.

The filter fitted between the fuel tank and the injection pump is provided to prevent this trouble. Gauze filters, however fine, are completely useless for diesel work, and a good filter is essential. The filter deserves a little special attention—we will mention it again later.

The injector nozzles, too, can suffer damage from dirt or dust in the fuel. The nozzles, which spray the fuel into the combustion chambers, operate against very high compression pressures, and, like the pump plungers, are high precision jobs. To enable the nozzle to break up the small charge of fuel into a finely atomised spray so that it will mix thoroughly with the air compressed in the chamber and give good combustion, the holes in the nozzle are very small. A needle valve fits in the nozzle and closes it except while injection of the fuel is actually taking place. The needle must fit the nozzle and valve seat perfectly, and it is held to the seat by heavy spring pressure. A very small amount of fine grit or abrasive dust in the fuel can cause sufficient scuffing or wear to upset the nozzle entirely, causing knocking, uneven running and smoky exhaust.

Again, clean fuel is the answer. See that the engine gets clean fuel, and you won't have any trouble.

Now, what can you do to ensure that your fuel is clean, and stays clean? The only way that dirt can get into the fuel system of a vehicle in everyday use is through the fuel tank filler. It goes in with the fuel.

If you have to store your own fuel, storage tanks must be clean at the outset, and NOT galvanised. Fuel tanks must be covered so that dust and water cannot get in and scale will not form. The storage building should be clean and have a good floor. Take a pride in keeping the place spick and span—you will find it pays. If you are installing a new tank, talk to your fuel supplier who will give you good advice.

We recommend refuelling through a hose, the nozzle of which should be carefully wiped before use.

Should any fuel be spilt on tank or utensils when refuelling, wipe it up right away with a clean cotton rag, free from fluff. You see, fuel oil does not evaporate as petrol does and, if left, will gather dust and dirt from everywhere, Don't use cotton waste, the fluff from which will surely get into the fuel tank. *And be careful where you put down the fuel tank cap*—see that it does not pick up dust or grit. (This is perhaps the way that most dirt gets into the system.)

CLEANLINESS IS THE FIRST CARE WHEN REFUELLING

Some of these points may sound a little tedious—but start off right and take these sensible precautions every time—they soon become a habit and no trouble. You will be amply repaid in the service you get from your vehicle.

Now, in spite of all your care, a certain amount of dirt will get into the fuel. Look at any shaft of sunlight and see the countless dust particles floating in the air. To cope with this fine dirt, a small amount of which is unavoidable, the diesel engine is provided with a special fuel filter, situated in the fuel line between the fuel tank and the injection pump. The filtering element was formerly of fine cotton cloth or felt (in some cases these may still be in use), but the most efficient elements today are of a specially prepared paper. The paper element filter is now standard equipment on most vehicles. In scientifically conducted tests it gave up to six times the life of the injection pump than that obtained with the old type of filter.

Periodically, as dirt collects, it becomes necessary to service the fuel filter. For detailed instructions of the correct procedure, refer to page 60. We can give you a few "golden rules" about the job. It will be obvious that the cleaner the fuel is in the first place, the less chance there is of the filter becoming choked, it is not so much by solid impurities, as by waxy sludge which is present to a varying degree in all fuels, no matter how clean. The life of the filter element depends therefore on the amount of fuel passed through it, and on the particular grade of fuel used—some fuels in some conditions are more prone to waxy deposits than others. **Systematic checking and cleaning of the fuel system at the recommended intervals can prevent malfunction caused by plugged (blocked) or burnt injector nozzles and may obviate premature injector overhaul or replacements.**

The factors which can affect the performance of diesel engine injectors vary so much that it is impossible to quote a service interval that will meet all conditions, but it is recommended that the inspection intervals should not exceed 6 months or 10,000 kilometres.

Depending on the operating conditions, the cleanliness and quality of the fuel, and the condition of the engine, the injectors may require servicing at more frequent intervals.

The fuel pump and the injector nozzles will continue to work properly for very long periods as long as they are supplied with clean suitable fuel. As long as they are working properly, leave them alone. The overhaul, maintenance and adjustment of injection pumps and nozzles is a specialised job, requiring special tools and test equipment, and should be carried out by a trained service engineer. Once again, this Owner Handbook is your best guide.

Finally, may we repeat—keep the fuel clean and your fuel injection equipment will give you trouble-free service. If the fuel pump and nozzles do not appear to be working properly, see your GMH Dealer.

Your new vehicle will be fitted with the usual electrical equipment: a battery, starter, alternator-regulator and lighting equipment, etc.

A few elementary points about the electrical equipment may help. First, the same sound general principle—keep it clean! This will go a long way towards avoiding trouble. Read this Owner Handbook carefully; it will tell you what should be done and when attention may be necessary.

A diesel engine takes quite a bit of turning over for starting because it has a very high cylinder compression, and this is one good reason for keeping the electrical equipment in good order.

Let us begin with the alternator: it must be able to charge the battery properly or it will soon be ''flat'' as starting imposes a very heavy load on the battery.

Make sure that all electrical connections are clean and tight. A smear of petroleum jelly on the connections will prevent corrosion.

Make sure that fuel oil is not spilled over the alternator when adjustments are made to the fuel pump or it may cause an electrical breakdown. Remember, prevention is better than cure.

The introduction of alternators, has brought about the necessity for you to ensure that these products are not damaged by reversing electrical connections.

As the battery negative lead is connected to earth, care must be taken to ensure that the battery is always connected correctly. This is known as the negative earth system.

Also it is most important to remove the battery leads when charging a battery, as it only requires a fraction of a second of reverse polarity to completely ruin semi-conductor equipment.

With the electric starter there is one very important point which must be emphasised—NEVER turn the ignition switch to 'start' position while the engine is running. This could cause considerable damage and put the starter out of commission.

Please read the Battery section of this Owner Handbook very carefully.

How a Diesel Engine Works

The diesel or compression-ignition engine resembles the petrol engine more closely than any other type. It is another form of the reciprocating internal combustion engine. The diesel is widely employed in commercial vehicles, ships, railway engines and as yet to a lesser degree in cars and light commercial vehicles.

In the diesel engine, only air enters the cylinder on the intake stroke and this air is compressed on the compression stroke. Compression ratios range from 16:1 to 25:1. This produces pressures of about 40 kg/cm² at the top of the compression stroke. When air is rapidly compressed to this pressure it reaches a temperature of about 550°C. This is sufficient to ignite the fuel oil which is sprayed into the heated air. No separate ignition system is required because the oil is ignited by the heat created by compressing the air. The fuel used is closely related to petrol, but it is a heavier type of hydrocarbon.

Just prior to the top of the compression stroke, a precisely measured amount of fuel is injected into the combustion chamber in the form of a fine spray, at a pressure of 12,500 kPa. It ignites instantly and continues to burn as long as fuel is sprayed into the combustion chamber. The expanding gases force the piston down on the power stroke and they are expelled on the exhaust stroke.

The compression-ignition engine is considerably more economical to operate than a petrol engine because the high compression ratio assures better thermal efficiency.

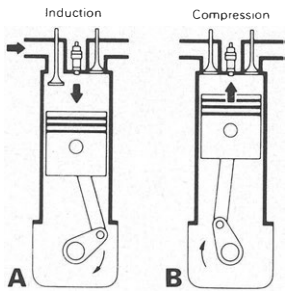
In the petrol engine, where a mixture of air and fuel is compressed, the highest allowable compression ratio is about 10:1 with commercially available fuel. When the compression ratio is increased over 10:1 knocking results.

On the other hand, the diesel engine requires a much higher compression ratio to generate the high temperatures needed for fuel ignition. This creates better thermal efficiency.

How a Diesel Engine Works

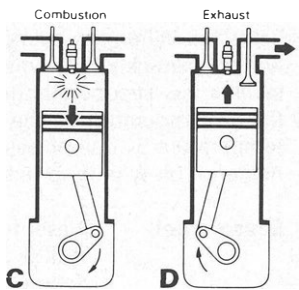
A With the Diesel fuel injection system, air is inducted into the cylinder by the piston moving down.

B The air is then compressed at a ratio of about 20.0:1.



C The fuel injection nozzle injects the diesel fuel into the cylinder. With the highly compressed air, combustion then takes place.

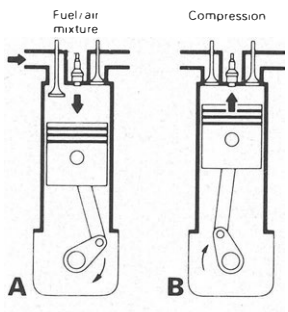
D Exhausted gases are then expelled.



How a Petrol Engine Works

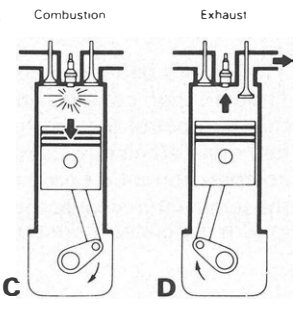
A The petrol and air mixture is fed into the combustion chamber through the carburettor.

B The petrol/air mixture is then compressed at a ratio of about 8.5:1.



C The spark plug, fired by the electrical system, ignites petrol/air mixture for combustion.

D The exhaust gases are then expelled.



Why a Diesel Engine needs Pre-heating

As mentioned earlier, a diesel runs on compressed air and fuel oil. As the air is compressed in the cylinder, it heats up. When the cylinder is already warm a diesel will start quickly, but when the cylinder is cold, starting takes a few seconds longer. As it is impossible to raise the air temperature in the cylinder to starting temperature by compression alone the diesel uses a heater or glow plug to raise it high enough for starting.

Diesel fuel: Diesel fuel, will ignite at temperatures of 320-350° Centigrade without any electric starting devices.

Petrol: Petrol ignites at temperatures of 600-650° Centrigrade, and ignition is achieved through an electric current fed into the combustion chambers via sparking plugs.

Diesel's Fuel Economy

The diesel's better fuel economy owes much to the engine's high compression ratio, more than double that of a petrol engine. In other words, the diesel burns fuel more efficiently than a petrol engine. The higher compression ratio burns fuel more quickly increasing the temperature inside the combustion chamber which in turn generates more power.

Fuel Economy Tips

How you drive, and where you drive have an effect on your fuel economy. The following pointers will help reduce your fuel bill.

Avoid:

Hard Acceleration.

Stop-Start Driving. Plan your trips ahead.

Excessive Speed. You can save on your fuel bill by driving at 80 km/h instead of 110 km/h.

Engine Idling. Turn the engine off while you wait.

Hard Driving in Built-up Areas. Fast driving up to stopping points wastes fuel because energy is dissipated as heat under hard braking. Additionally energy in the form of fuel is needed to accelerate again.

Check:

Air Cleaner Element. A dirty air cleaner element reduces engine efficiency. Replace it at the required intervals.

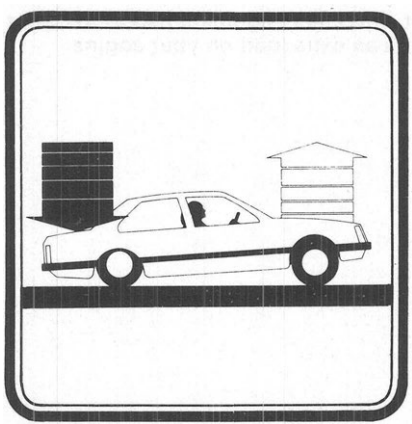
Engine Tuning. An out of tune engine cannot give good fuel economy.

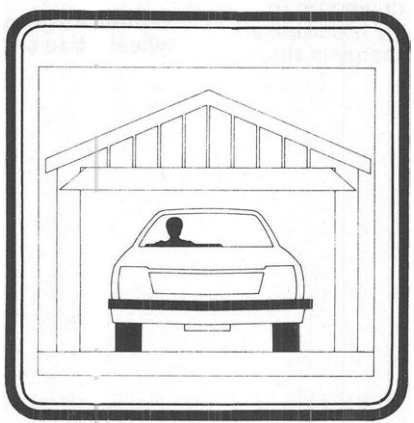
Tyre Inflation. Under inflation wastes fuel.

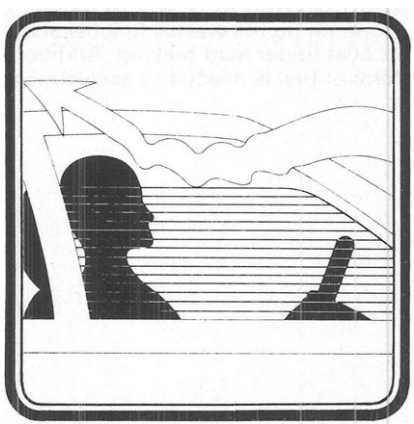
Wheel Alignment. Incorrect alignment makes the front wheels drag and puts an extra load on your engine.

In order to achieve optimum fuel economy, it is essential to maintain your car in peak mechanical condition. Observe the service schedule set out in this Handbook, and have your car tuned regularly.

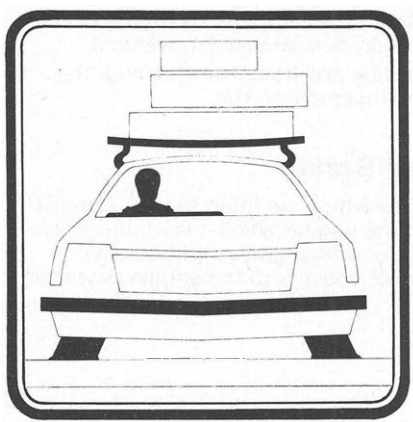
- Ensure that the engine is idling at the recommended speed — fast idling wastes fuel.
- Overloading the rear suspension upsets the aerodynamics of your vehicle by raising the front of the car. The resultant drag increase will contribute to increased fuel consumption.
- Faulty wheel alignment and underinflated tyres create rolling resistance and contribute to increased fuel consumption. Radial tyres produce less resistance than cross-ply tyres and marginally improve fuel economy, but only when properly inflated.
- Long warm-ups in the garage or drive-way are unnecessary and waste fuel. A car takes approximately twenty minutes to achieve its normal operating temperature — and it does this most efficiently on the road.
- Avoid full-throttle acceleration
- Use the accelerator evenly — avoid sudden, jerky movements — they're certain fuel wasters.
- In the interests of efficient fuel consumption, it is desirable to achieve top gear operation as early as possible, but under no circumstances should you force the engine to labour in top gear.
- Driving with windows open affects the aerodynamics of the vehicle, increasing drag and contributing to poor fuel economy.

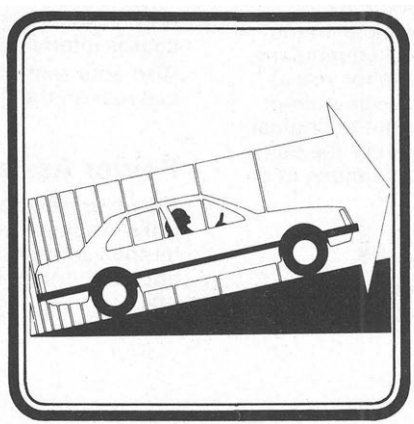


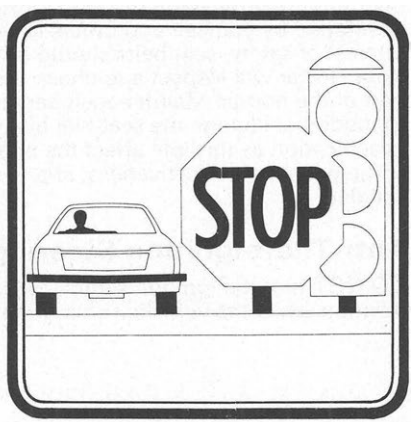




- When driving into a head wind, slow down — the air resistance at higher speeds means higher fuel consumption.
- When loading your car's roof rack try to keep the load as low as possible — thereby minimising wind drag which contributes to higher fuel consumption.
- Check that brakes are not dragging or binding (including parking brake).
- Efficient fuel ignition can only be achieved when points, plugs and timing gear are in good condition and adjusted correctly.
- Avoid driving with your left foot resting on the clutch or brake pedal.
- When driving up a hill best economy will be obtained by maintaining the highest gear consistant with not labouring the engine at low speed (see p. 34 Manual Transmission).
- The shortest way to your destination may not be necessarily the most economical way. Pre-plan your trips, taking into account the location and number of stop signs and traffic lights. Select the route with the least number of obstructions to the traffic flow. It may not be the shortest way but it's probably the quickest — and you will save fuel.







Safe Driving Hints

Important

These items are listed as a safety reminder to you. The appropriate section of this handbook should be referred to for a more detailed explanation.

Carbon Monoxide

Avoid inhaling exhaust gases because they contain carbon monoxide, which is colourless and odourless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal.

Seat Belts

Various road laws require the wearing of seat belts. It is important that the habit of using these should be developed by yourself and others in the vehicle. In the interest of safety, seat belts should be checked regularly. Your Dealer will inspect and check the belts for you as part of the normal Maintenance Service. Never attempt to modify or change the seat belt away from the original specification as this will affect the operation of the belts and reduce their effectiveness, in preventing injury, in an accident.

Anti-Theft Ignition Steering Lock

DO NOT turn the ignition switch away from the ON position while the vehicle is in motion as this renders ineffective any power assisted equipment fitted to your vehicle.

Never remove the key while the vehicle is in motion as this will lock the steering of the vehicle and render it inoperative.

Brakes

Driving through water may affect performance. Applying the brakes lightly will indicate whether they have been affected. To dry them quickly, lightly apply the brakes while maintaining a slow forward speed with an assured clear distance ahead until brake performance returns to normal.

Brake pedal travel should not be obstructed by ill-fitting floor mats or any other material under the pedal which causes interference with normal pedal movement.

Also your seat should be positioned so that your feet can rest on the floor under the pedals.

Power Assisted Brake

Power assisted brakes which are fitted to your Gemini utilise vacuum from the engine when it is running. Never let the vehicle run down steep grades without the engine running. **Never** coast with the engine switched off.

Loose Articles

Do not leave a loose load or articles inside the passenger compartment. Stow articles in the luggage compartment and tie down if necessary.

Petrol Fumes

Always stop the engine and do not smoke or allow open flames or sparks near the vehicle when refuelling. If petrol fumes are noticed while driving, the cause should be determined and corrected without delay.

Parking

When leaving your vehicle unattended:

1. Apply the parking brake. (Refer to page 39).
2. Place transmission selector in:
   Reverse — Manual Trans. Park — Automatic Trans.
3. Turn key to LOCK position and remove key.
4. Shut windows and lock all doors.

Tyre Traction

A decrease in driving, cornering, and braking traction occurs when water, snow, ice, gravel, or other material is on the road surface. Driving practices and vehicle speed should be adjusted to the road conditions.

Cooling System

If the cooling system is hot, the radiator cap **must not** be removed quickly — it should be rotated slowly to the first stop, which permits the pressure to release slowly through the overflow pipe. Before doing this cover the cap with an old rag or cloth to avoid possible scalding.

Safety Checklist

Follow these simple steps before driving your new Gemini. They will help make your motoring safer and more enjoyable.

Before getting in

Check that the windows, mirrors and lights are clean.

Check tyre inflation.

If you intend to reverse, check that the area behind you is clear.

Before driving off

Be sure you understand your vehicle and know how to operate it safely.

Close and lock all doors.

Position your seat for comfortable driving.

Adjust rear vision mirrors.

FASTEN SEAT BELTS.

Check that the warning indicators light up when you turn the key to start the engine.

Release the parking brake.

Caution: Never leave loose articles inside the car — they may become dangerous projectiles if you have a collision or stop suddenly.

Maintenance for safety

The following items require regular attention in the interests of safety. If anything goes wrong with any one of them, an authorised GMH Dealer will help you.

- BRAKES.
- HORN.
- ALL LIGHTS.
- REAR VISION MIRRORS.
- SEAT BELTS.
- GLASS AREAS.
- EXHAUST SYSTEM.
- STEERING & WHEEL ALIGNMENT.
- WINDSHIELD WIPERS & WASHERS.
- TYRES.
- SUSPENSION.

Keys and Locks

The sedan has one key to operate all locks—ignition, doors, glove-box, boot and fuel cap. The wagon and van have two keys—1 for all doors and 1 for ignition, glove compartment and fuel cap.

Opening Doors

To unlock the front doors on the sedan from outside, insert the key and turn it towards the back of the vehicle.

On vans and wagons the key is turned to the front of the vehicle.

To open, lift the door handle up and out.

Note: Doors on all models have a free-wheeling lock mechanism. This means that the doors cannot be opened from the outside or inside unless the locking button is in the "Unlock" position.

Locking Doors

Inside — To lock doors on sedans push in the upper section of the locking button. To unlock, push in the lower section of the locking button.

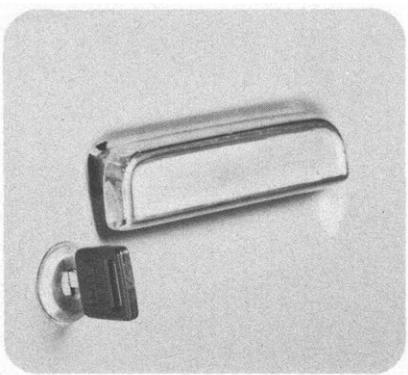
Vans and wagons have "push button" locks on upper doorsills. Push down to lock, lift to unlock.

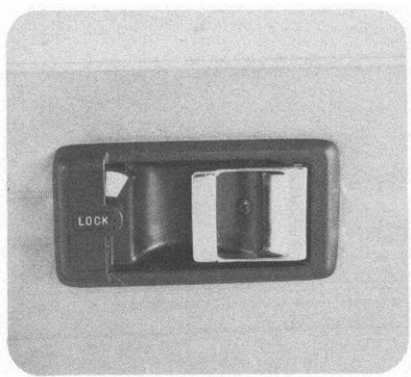
Outside — With the door open, shift inside locking button to "Lock". Then close the door holding the handle upwards.

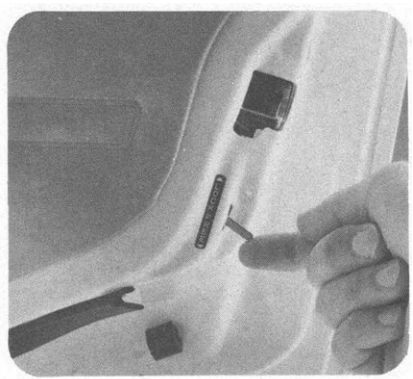
Rear Sedan Door "Child-Proof" Lock

This lock is on both rear doors of sedans. To operate it, slide the lever up as far as it will go and close the doors. The doors cannot now be opened from inside, regardless of the locking button position.

To unlock, open the door from outside and slide the lever back down.







A Hint

Door locks may ice up in cold weather. If this happens, warm the key before you insert it. You may have to do this several times.

Sedan fuel cap lock

The fuel filler is located behind the air extraction vent on the drivers side of the car.

To remove the cap, turn the key anti-clockwise, then turn the cap in the same direction until it comes free.

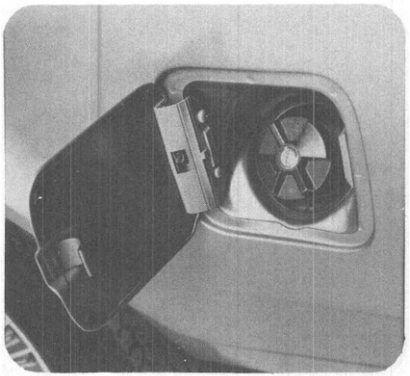
To replace it, fit it on to the neck of the filler, press down and turn the cap clockwise. Turn the key clockwise to lock.

Wagon and Van fuel cap lock

The fuel filler is located behind the small door at the rear of the passenger side of the car.

To remove the cap, turn the key anti-clockwise, then turn the cap in the same direction until it comes free.

To replace it, fit it on to the neck of the filler, press down and turn the cap clockwise. Turn the key clockwise to lock.



Glove compartment

To lock, turn the key towards the steering wheel one quarter of a turn.

To unlock, turn the key towards the passenger side door, one quarter of a turn, withdraw the key, then turn the button.

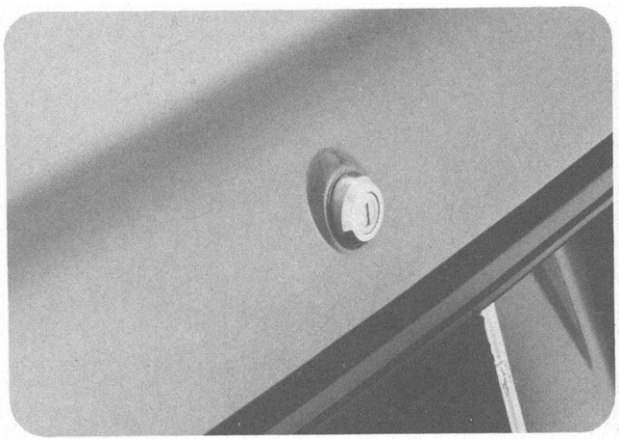
Rear Locks

Code Number

This is stamped on the key-shaft, and should be recorded immediately. If your key is lost, duplicates can be ordered from your GMH dealer by quoting the code number. (It's not a bad idea to have a spare key anyway.)

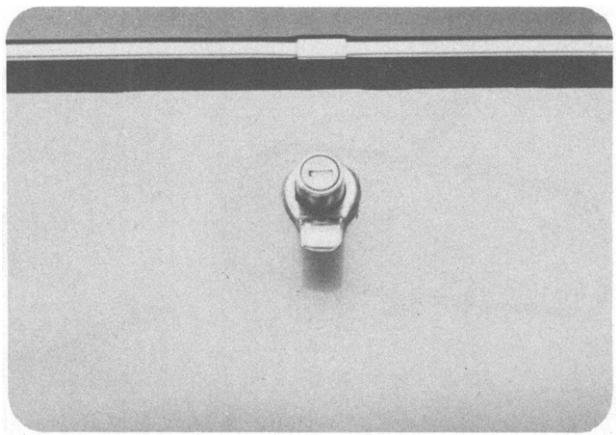
Sedan luggage compartment

To unlock, turn the key clockwise. The lid opens automatically. The compartment locks automatically when pushed shut.



Wagon and van rear door

To open the rear door insert the key and turn clockwise. Remove the key and push the button to open. The door should be relocked when it is closed again.



Rear vision mirrors

Inside mirror

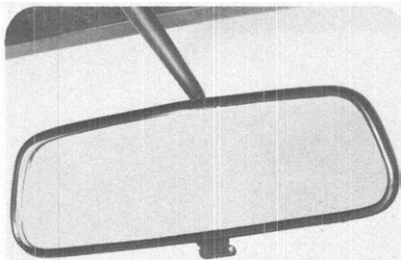
This is shatter-resistant, and mounted in such a way that it can be knocked out in case of accident to reduce the risk of injury.

Anti-glare type

(where fitted)

Where the anti-glare mirror is fitted, a control lever on the lower edge of the mirror enables an anti-glare reflector to be used during night driving. This reduces headlamp glare from following vehicles.

During normal daylight operation, the lever should be set forward away from the driver. To reduce glare at night, move the lever backwards towards driver.

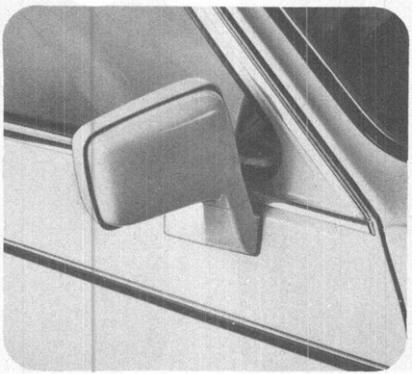


Outside mirror

This is mounted outside the driver's door and enables you to observe traffic in the next lane. It is designed to deflect out of harms way should you steer too close to an obstruction.

To adjust this mirror correctly, check it whilst seated in the normal driving position.

Where a passenger side rear vision mirror is fitted, care should be taken to adjust this correctly for the driver's line of vision from the normal driving position.



Remote control type

(where fitted)

The angle of these mirrors can be controlled by moving the stalk located on the inside of the door. The change of angle of the mirror is in the same direction as the control movement. When selecting the most suitable angle for the mirror, ensure that the driver's head is in the normal position for driving then adjust the mirror angle to suit.

Window Controls

Door Windows

All passenger door windows wind up and down.

Wagon Rear Passenger Windows

To open, pull the catch out towards you. This releases the lock. Push the centre of the catch inwards to hold the window open.

Seat Adjustment

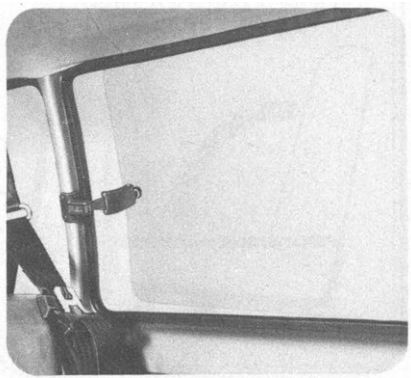
Front Seat

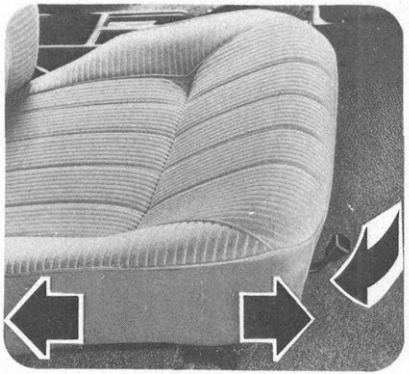
Forward and Backward Setting

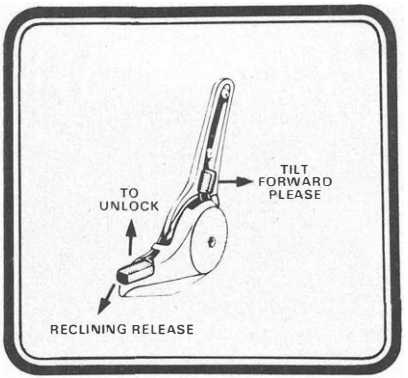
Move the lever at the front of the seat to the right then slide the seat to the desired position. Release the lever. Adjustment should not be made when the vehicle is moving.

Reclining Back Adjustment

The control lever is at the bottom of the seat back on the outer side of the seat. Raise the lever and adjust the angle. It will lock into place automatically once the lever is released.







Wagon Fold Down Rear Seat

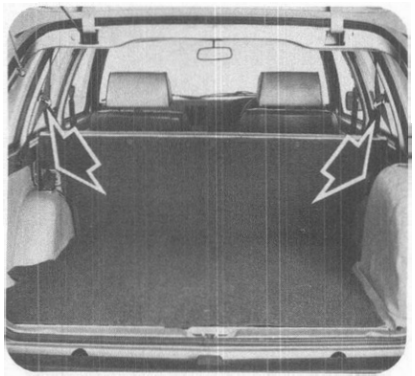
CAUTION: When converting rear seat always avoid standing on the drivers side if the vehicle is parked at the kerb.

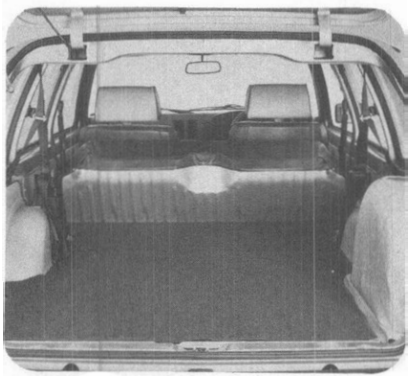
Step 1. — Lift the seat cushion to an upright position.

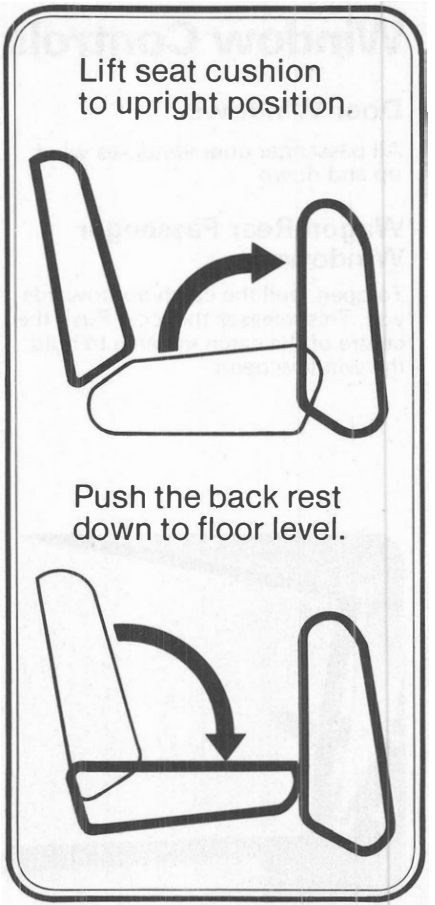
Step 2. — Release both of the safety catches at the rear of the upright backrest.

Step 3. — Push the backrest down to floor level to complete conversion.

Step 4. — To return the seat to its normal position lift the hinged backrest upright and push the seat cushion back down into place. Ensure that the upright backrest is securely locked into position on both sides and that the seat belts are clear.







Seat Belts

Study this section carefully. It is important that you understand how to correctly wear a seat belt. You should also ensure that all occupants wear a properly adjusted seat belt whenever the vehicle is moving.

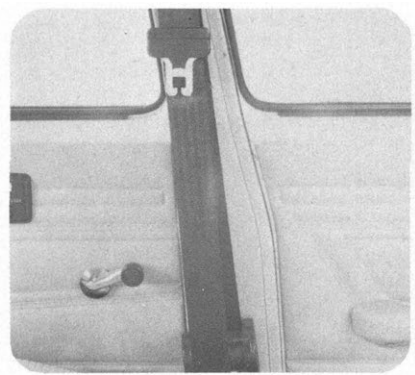
Front Seat Belts

To put on a front seat belt, pull it out of the retractor and clip it into the buckle. When the metal tongue has locked safely into place you will hear a "click". After fastening, settle the belt by running your hand under it. Starting at the hip, going across the buckle, then up under the sash.

The lap section should be worn **as low as possible on your hips**, not on your waist. Make sure the sash and lap sections of the seat belt are free from twists and are fitting firmly. Any extra belt lengths should retract automatically when you run your hand under it.

The emergency—locking retractor belt allows you to move freely while the vehicle is travelling normally. The belt will lock immediately on fast braking, impact with a solid object or any quick action.

To release the belt, press the buckle, release button and allow the belt to retract. Check that it fully retracts without twisting or turning.



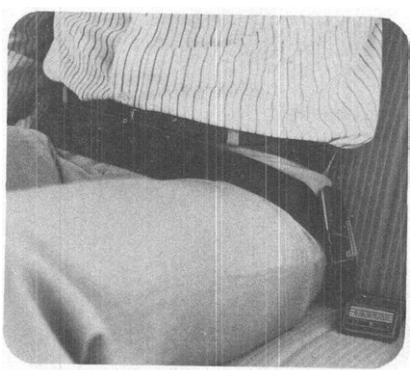
Rear Seat Belts

Non-Retractor Lap/Sash Belts

To adjust: Settle yourself comfortably. Clip the belt on firmly. To lengthen: tilt the belt adjuster and pull the belt from just below the finger grip bar. To shorten: tilt the belt adjuster and use the finger grip bar to pull the belt through the belt adjuster.

Belt Storage

A hook on the belt adjuster keeps the belts away from doors when they're not in use.



Lap-type Belts

These adjust in the same way as the non-retractor type belts.

Belt Storage

When not in use keep the lap belts fastened.

Safety Hints:

Check seat belts regularly. Your GMH Dealer will do this as part of normal Guardian Maintenance.

Adjust seat belts firmly. A loose belt is no help at all. Seat belts must be replaced if they have been worn during a severe impact — even if there's no obvious damage.

Don't wear a belt with twisted straps.

Don't ever put a seat belt around a child being nursed on the lap.

AUSTRALIAN DESIGN RULES: WARNINGS

Seat belts are designed to bear upon the bony structure of the body, and should be worn low across the front of the pelvis, or the pelvis, chest and shoulders, as applicable; wearing the lap section of the belt across the abdominal area must be avoided.

Seat belts should be adjusted as firmly as possible, consistent with comfort, to provide the protection for which they have been designed. A slack belt will greatly reduce the protection afforded to the wearer.

Care should be taken to avoid contamination of the webbing with polishes, oils and chemicals, and particularly battery acid. Cleaning may safely be carried out using mild soap and water. The belt should be replaced if webbing becomes frayed, contaminated or damaged.

It is essential to replace the entire assembly after it has been worn in a severe impact even if damage to the assembly is not obvious.

Belts should not be worn with straps twisted.

Each seat belt assembly must only be used by one occupant; it is dangerous to put a belt around a child being carried on the occupant's lap.

No modifications or additions should be made by the user which will either prevent the seat belt adjusting devices from operating to remove slack, or prevent the seat belt assembly from being adjusted to remove slack.

The positioning of the tongue restrictor must never interfere with or stop the belt from fully retracting.

Infant & Child Restraints

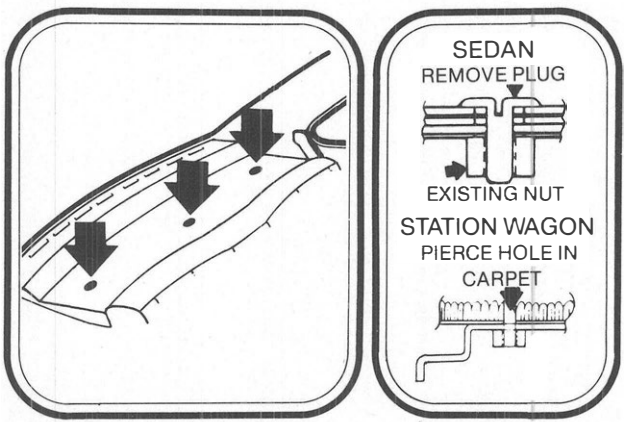
Your Gemini is provided with anchorage points for child restraints — see diagram — and your GMH Dealer will be more than happy to advise you about the various types of child restraints available.

Children should be belted in at all times.

Never use a child restraint as an adult seat belt — it will not take the extra weight.

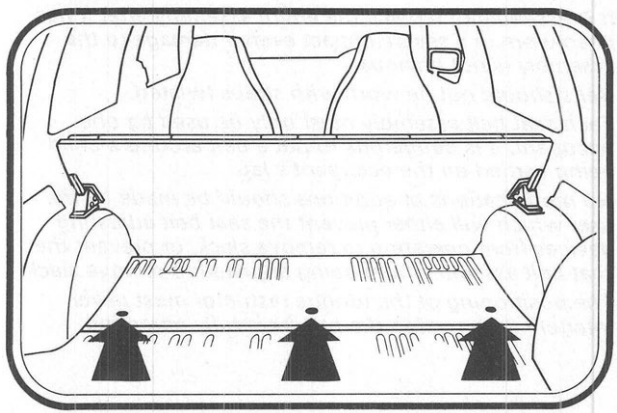
Sedan

Anchorage points are located on the rear window ledge. Remove the plugs and install child restraints with the anchor bolts.



Wagon

Anchorage points are located on the floor behind the rear seat. Cut slits in carpets, remove the plugs and install child restraints with the anchor bolts.



To tighten Harness pull the strap upwards
The GM Child Love Seat is designed for children weighing 9 to 19 kg, up to 1 metre in height, who are able to sit up alone.
Press release buckle

WARNING: Child restraint anchorages are designed to withstand only those loads imposed by correctly fitted child restraints. Under no circumstances are they to be used for adult seat belts or harnesses.

On rare occasions it may be necessary to travel with a child in a vehicle without approved infant or child restraints. If so, please heed the following precautions.

INFANTS UNABLE TO SIT BY THEMSELVES should be carried in a padded, covered bassinet placed **across** the back seat. Strap this in tightly with the two regular seat belts.

CHILDREN ABLE TO SIT UP should be belted with the regular seat belt. If the sash part rubs on the child's neck or face, move the child towards the centre of the vehicle. If this doesn't work, the child should be lap-belted on the back seat. NEVER allow a child to stand or kneel on any seat.

Care of Seat Belts

Clean belts only with a solution of mild soap and lukewarm water. Never use bleach. Replace the belts if they become frayed or damaged.

Section 2: Starting and Operating

EXHAUST GAS WARNING
Carbon Monoxide Poisoning

Exhaust gases contain carbon monoxide which can cause unconsciousness and even death.

You could breathe the gases in if the exhaust system on your vehicle is faulty.

Have the vehicle checked thoroughly each time it is serviced. If you notice a change in exhaust noise, or if the back of your vehicle is damaged, take it to your GMH Dealer for inspection.

If you must drive with a faulty exhaust, drive with all the windows open.

Danger

Don't ever sit in a parked vehicle with the engine running for any length of time. And don't leave the children in there either.

Don't run the engine in the garage any more than necessary to move the vehicle.

If this should be necessary—say for an engine check—ventilate the vehicle by closing the heat or flow through ventilation outlets and turning the fan onto 4.

If you must travel with the boot open, close all windows, fully open the ventilation system and do not exceed 50 km/h unless necessary.

Steering Column Controls

Ignition Lock

This is an anti-theft lock and is on the right side of the steering column. It has four positions.

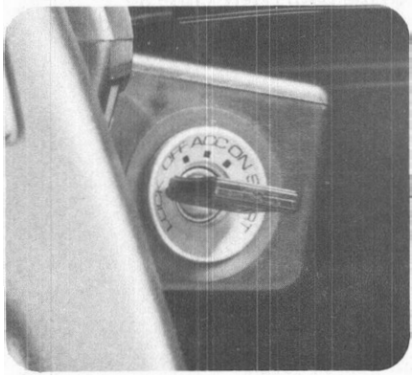
Lock: This is the normal parking position, and locks the ignition and the steering wheel when the key is removed.

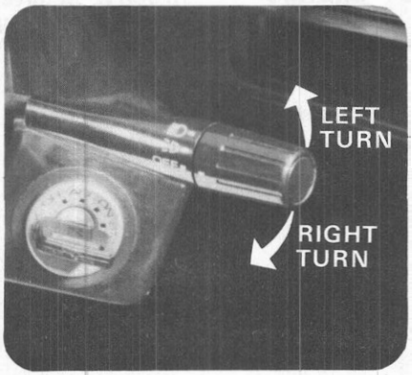
Acc: This allows you to use the electrical components — lighter, radio etc. — when the engine is not running.

On: All systems go: the normal running position.

Start: This starts the engine. The key will return to **On** when released.

LEAVE THE KEY IN THE ON POSITION AT ALL TIMES WHILE THE CAR IS MOVING.





COMBINATION STALK (Right)

Head Lights

Head lights, parking lights and turn signal lights are all controlled by the combination stalk, on the right side of the steering column. Turn the end of the stalk to the position marked to light the head lights or parking lights. High beam, and headlight flash facility are operated by moving the stalk up and down.

Turn Signals

To indicate turning left, push the right hand stalk upwards. To indicate turning right, push the same stalk downwards. The signal cancels automatically when the turn is completed. If the turn signal lights don't flash or if you can't hear the indicator clicking, or if they start to flash slower or faster than usual—have them checked by your GMH Dealer right away.

LEFT HAND STALK

Windscreen Wipers and Washers

The combination stalk on the left or passenger side of the steering column operates the wipers and washers when the ignition switch is on ON.

Intermittent Mode Wiper (where fitted)

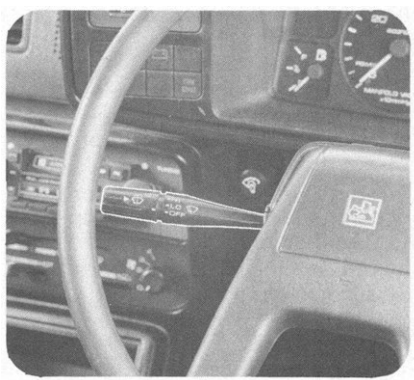
In the INT position the wipers will sweep once across the windscreen and return to their rest position repeating this cycle every few seconds.

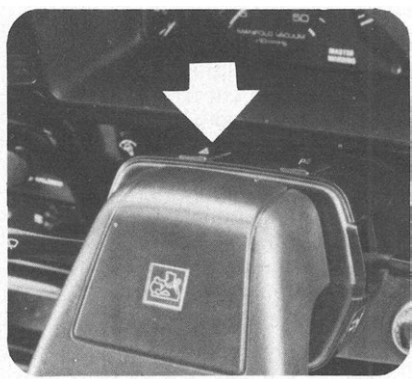
Hazard Warning Switch

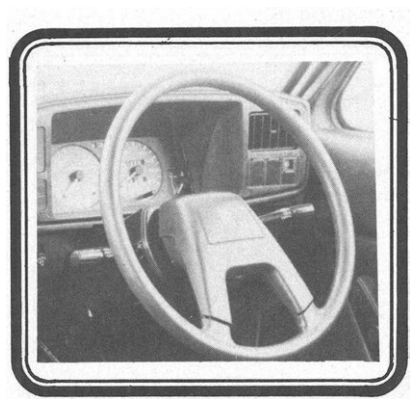
This is the rocker switch on the top of the steering column cover. When stopped in an emergency situation, turn the switch on. This makes all four indicator lights flash continuously, and both turn indicators will flash also.

Horns

The horn on your Gemini has both a high and a low note. The horn is operated by pressing the centre of the steering wheel.







Starting — Petrol Engine

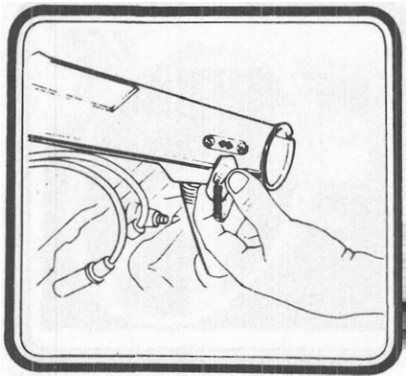
Air Preheat System

(petrol engine)

On the air cleaner inlet duct there is an air preheat valve which needs to be manually operated to suit seasonal changes in air temperature.

In colder weather when the ambient temperature is around 15°C and below, the selector lever should be set in position 'W'. This will allow the intake of preheated air which prevents carburettor icing as well as improving fuel combustion when the engine is cold.

In warmer weather when ambient temperatures are continually above 15°C the selector lever should be set to position 'S'.



At those times of the year when it can be above 15°C during the day and fall to well below 15°C at night, it is recommended that the lever be set at 'W' when operating under these conditions.

Cold Starting

1. Before starting, ensure that the parking brake is firmly applied. Do not release it until you are ready to drive off.
2. For manual transmissions depress the clutch pedal and shift the transmission to Neutral.

   For automatic transmissions shift the selector lever to either N or P.

   The engine will not start if it is in any other position.
3. Now turn the ignition key to ON position and check to see that the oil pressure and generator indicator lights are on.
4. Before starting a cold engine, press the accelerator right down once only then release the accelerator slowly—this sets the automatic choke system and injects fuel.
5. Now turn the key to START.

   If the car has been standing for a few days, it may be necessary to repeat steps 4 and 5 several times before the engine starts.
6. After the engine starts, check that the indicator lights go out. Run the engine at fast idle for about 30 seconds before moving off.

   The choke system shuts itself off automatically as the engine warms up.

Flooding

Pumping the accelerator can cause flooding which will prevent the engine from starting.

If this occurs, press the accelerator down to the floor and hold it there while holding the key in the START position. When the engine starts, allow the accelerator pedal to come up slowly.

Warm Starting

During summer, or when your engine is warm, the choke system operates only briefly — if at all.

To start — press the accelerator pedal to the floor, let it come up slowly, then turn the key to START.

Idle the engine in Neutral for about 30 seconds before driving off.

Starting — Diesel Engine

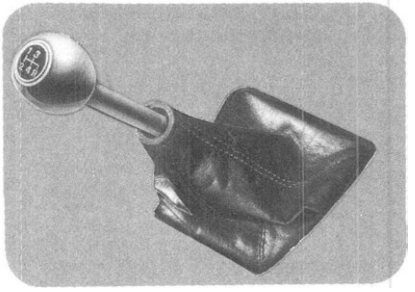
1. Before starting, ensure that the parking brake is firmly applied. Do not release it until you are ready to drive off.
2. Place transmission in Neutral and hold clutch pedal to the floor throughout the starting procedure.
3. Turn the ignition key to ON position and check to see that the oil pressure and generator indicator lights are on.
4. Fully depress and then release accelerator pedal.
5. Crank the engine by turning the ignition key to START. Release the key as soon as the engine starts.
6. When the engine starts, depress the accelerator pedal part way down and check that the oil pressure and generator indicator lights go out.

NOTE 1. When cranking the engine do not keep the starter motor engaged for more than 10 seconds at a time. If the starter motor has been operated several times, but the engine has failed to start, allow 30 seconds before trying again. If the engine fails to start after repeated cranking have the fuel system and electrical system checked.

2. If, after starting the engine, the buzzer should sound, this indicates a problem in the diesel preheating system. See your GMH dealer as soon as possible for rectification.

Transmission Controls

4 Speed Manual Transmission



This system has four fully synchronised forward gears and a non-synchronised reverse gear.

The gear selection pattern is indicated on the knob of the gear lever.

First Gear — Low: This is synchronised so it can be used at speeds up to 25 km/h to avoid overloading the engine.

Second Gear — Low Intermediate: Use this gear at speeds up to 50 km/h when driving in traffic. It is also useful on steep hills.

Third Gear — High Intermediate: Use this gear for acceleration and deceleration in the speed range 50-80 km/h.

Fourth Gear — High: This is the normal cruising gear at speeds down to 50 km/h. A lower gear should be selected for acceleration or deceleration.

Reverse Gear: This gear must never be engaged unless the vehicle is stationary. A slight pause between pushing the clutch in and moving into gear is desirable. The lever must be shifted across to your right against the spring pressure to pass into the reverse gear position.

Back-Up Lights
If the engine is on, these will operate whenever Reverse is selected.

NOTE: When fitted with a four speed manual transmission, to ensure minimum exhaust emission, the recommended gear shift speeds are: From 1st to 2nd 15 km/hr from 2nd to 3rd, 30 km/hr and from 3rd to 4th, 50 km/hr.

5 Speed Manual Transmission

This system has five fully synchronised forward gears and a non-synchronised reverse gear.

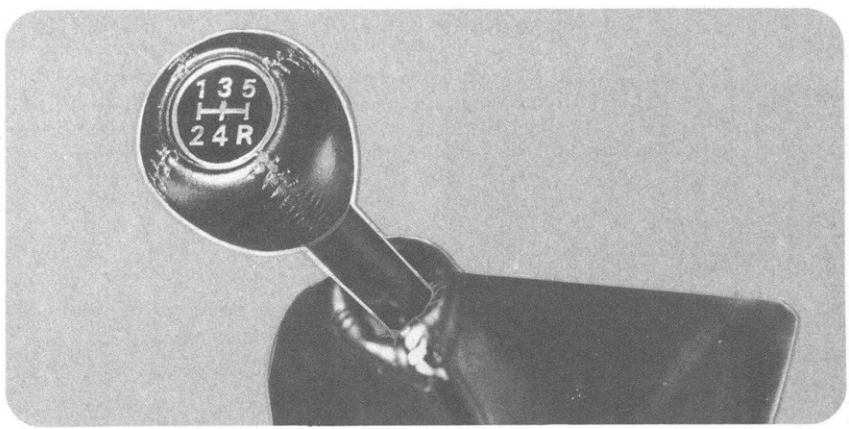
The gear selection pattern is indicated on the knob of the gear lever. First, Second, Third, Fourth and Reverse gears operate as described under 4 Speed Manual Transmission.

NOTE: When fitted with a five speed manual transmission, to ensure minimum exhaust emission, the recommended gear shift speeds are: From 1st to 2nd, 15 km/hr, from 2nd to 3rd, 30 km/hr and from 3rd to 4th, 50 km/hr.

Fifth Gear—Overdrive:—

Fifth gear is an overdrive gear which is used for highway—freeway cruising at speeds above 80 km/hr. The overdrive feature allows the use of a lower engine speed for given road speed, than in fourth (direct) gear and fuel economy benefits are derived from correct use of the overdrive ratio. Use direct (fourth gear) when acceleration is required. Use lower gears for retardation. Overdrive is an indirect gear, like 1st, 2nd and 3rd and some gear noise will be evident when vehicle is operated in overdrive.

Finally, do not drive your Gemini in overdrive at speeds less than 80 kph, as no fuel economy benefit is gained, and its use will adversely affect vehicle performance in traffic, and for acceleration.

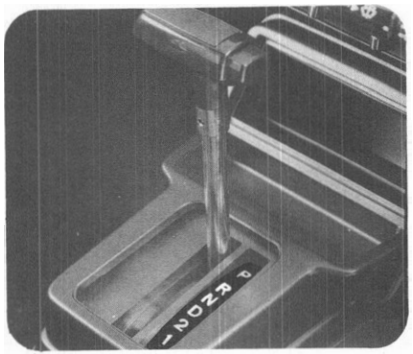


NOTE: The lever knob must be pulled against spring pressure in order to pass into the overdrive position (fifth gear).

Automatic Transmission

P — PARK
R — REVERSE
N — NEUTRAL
D — DRIVE
2 — SECOND GEAR
1 — LOW GEAR

The engine will not start unless the selector is in either P or N.
Select your "gear" — normally D — after the engine is running.
Going down through the "gears" from P to 1 — press the button to move from P to R. You can go through to N and D without pressing the button. Press it again to go to 2 and again to go to 1.



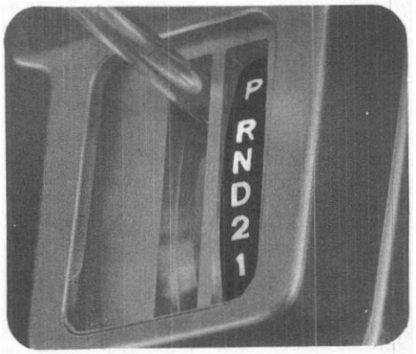
Going up from 1 to P — you can move from 1 to 2 to D to N without pressing the button.
Press it for either R or P.

What the Positions are for:

P — Parking. Always use the parking brake as well. Your engine may be started in this position.

R — Reverse. Your vehicle must be stationary before you select this position.

N — Neutral. This position can be used to start the engine. It must be used if the vehicle is being towed on two wheels by a tow truck.



D — Drive. This is the normal driving position and allows for adequate acceleration for all but extreme driving situations.

2 — Second. This may be used going down moderately steep hills. It will give a slight braking action without the use of the brakes.
Don't use at speeds over 100 km/h.

1 — First. This gives maximum braking for steep hills. Shift back to 2 or D when you've negotiated the difficult bits. Don't use at speeds over 65 km/h.

Back-Up Lights

If the engine is on, these will operate whenever Reverse is selected.

Passing

When the accelerator is pressed down hard, the shifts shown below will normally occur automatically. Speeds given may vary depending on type of rear axle and tyres.

Automatic Driving Don'ts

- Don't rev the engine with the brakes on in either 1, 2, D or R. This will overheat the transmission.
- Don't rev the engine to hold it on a slope. Use the brakes.
- Don't move into either R or P unless the vehicle has stopped.
- **DON'T EVER COAST THE VEHICLE IN N (NEUTRAL) — THIS LESSENS YOUR CONTROL AND BRAKING POWER.**

SELECTION	SPEED RANGES	EFFECT
SHIFT LEVER IN D		
Over	110 km/h	No Change
Under	95 km/h	Changes to Second Gear
Under	50 km/h	Changes to First Gear
SHIFT LEVER IN 2		
Over	65 km/h	No Change
Under	50 km/h	Changes to First Gear
SHIFT LEVER IN 1		
Don't Exceed	65 km/h	No Change

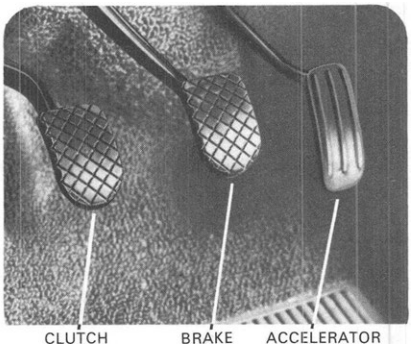
Floor Controls

Brake System

The braking system on your Gemini is actually two separate systems; one operating the front wheels, the other operating the back wheels.

So, if either system is faulty, you can still brake the vehicle, with extra pedal effort and an increased movement of the brake pedal towards the floor.

After you've been driving your vehicle for a while you will become used to how the brakes feel when they are operating normally. If you notice any change in this "feel", have them checked.



Front Disc Brakes

These brakes adjust themselves automatically.

Rear Drum Brakes

These self adjust every time you brake whilst moving in a forward direction. The system also includes a valve which reduces the tendency for the wheels to lock if you have to brake in an emergency.

Power-Assisted Brakes

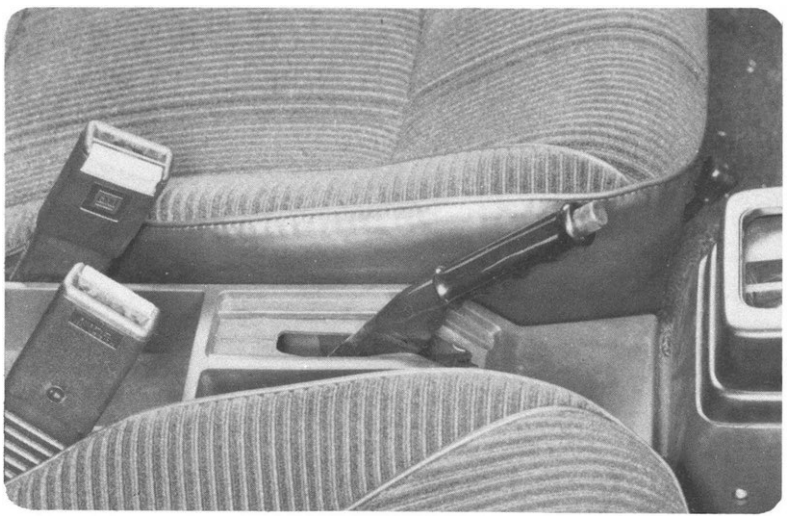
These will still work with the engine switched off, but you will have to exert more pedal pressure than usual. To be safe — never run downhill with the engine off, and never coast with the engine off. Also, never have the vehicle towed on 4 wheels without a rigid connection between the two vehicles. A tow truck is safer.

Parking Brake

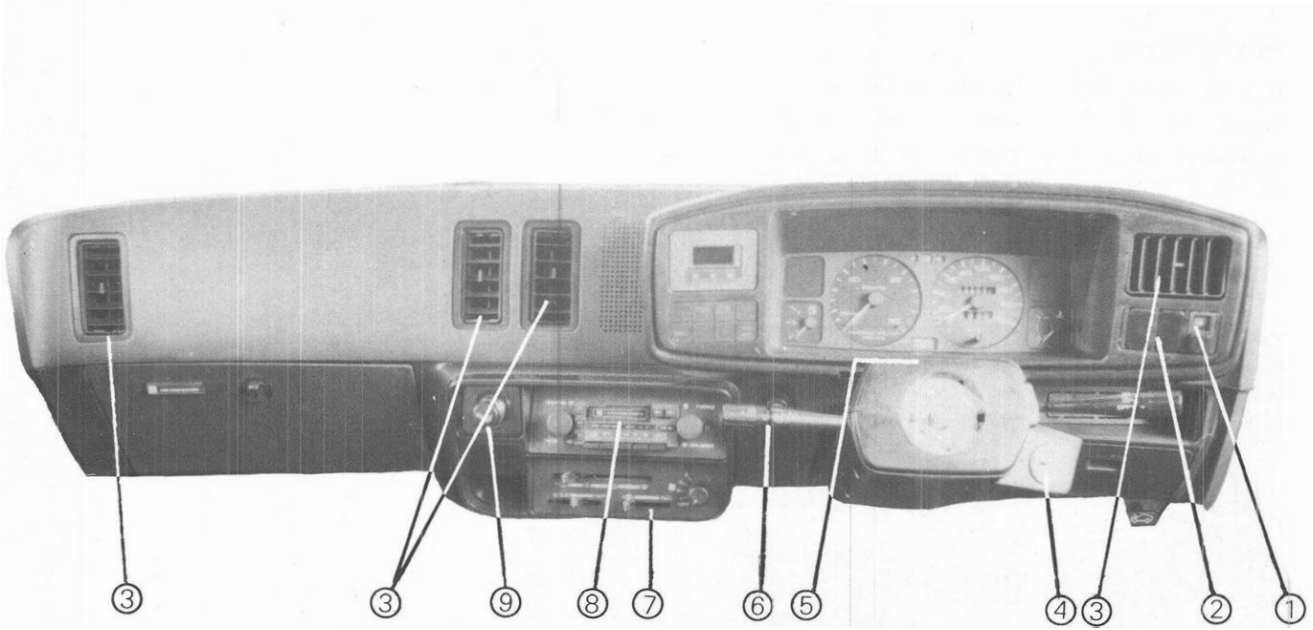
This is the lever between the two front seats.

To apply: pull the lever straight up. Don't touch the button on the end.

To release: pull the lever up a bit then press in the button.
Keep your thumb on the button and lower the lever.



Instrument Panel Controls and Dials



1. Heated rear window switch.
2. Position for two accessory switches.
3. Vents.
4. Ignition switch.
5. Hazard warning switch.
6. Instrument lighting control knob.
7. Ventilation controls.
8. Radio*.
9. Cigarette lighter*.

(Fittings which are not found on all models are marked with an asterisk*.)

Switches for Accessories

Fittings which are not on all models are marked with an asterisk *

Heated Rear Window Switch

The electrically heated rear window is switched on with the switch shown in illustration (page 40) and will only operate with the engine running. A coloured surface appears above the switch as soon as the heated rear window is switched on. The symbol illumination comes on together with the exterior vehicle lighting, it changes to a green colour when the rear window heating is switched on.

To avoid overloading the electrical system the heated rear window should only stay switched on until the rear window is clear. When cleaning the rear window observe the hints given under "Care of the Exterior".

Hazard Warning Switch

This is the rocker switch on the top left of the steering column—see page 31 for operation details.

Cigarette lighter*

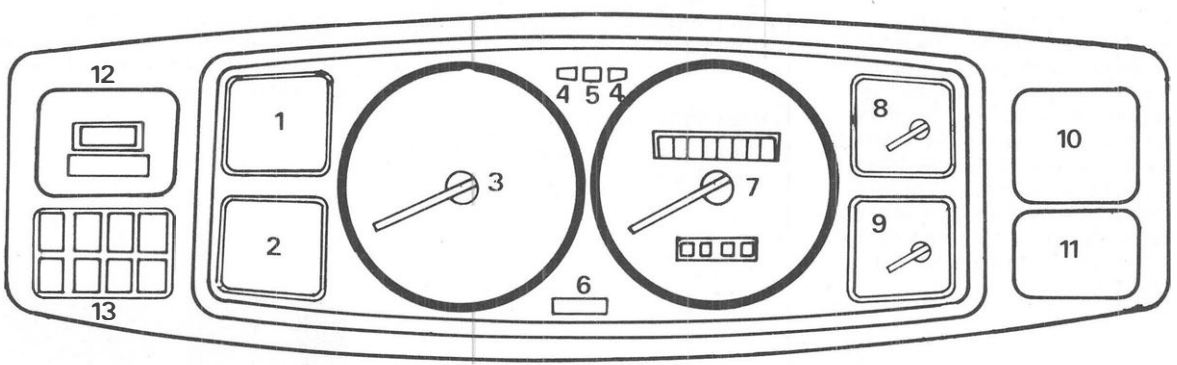
To use press the knob in. It will pop back when it is ready for use.

Instrument Lighting Control

The brightness of the instrument lighting may be controlled by rotating the dimmer control situated on the instrument panel to the left of the steering column.

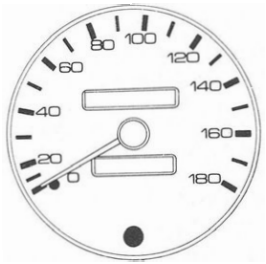
Instrument Panel—

Controls and dials vary on certain models. Fittings which are not found on all models are marked with an asterisk*.



1. Oil Pressure Gauge*.
2. Fuel Gauge.
3. Tachometer or Analogue Clock*.
4. Turn Signal Indicators.
5. High Beam Indicator Light.
6. Master Warning Light.
7. Speedometer, Tripmeter and Odometer.
8. Voltmeter*.
9. Temperature Gauge.
10. Vent.
11. Heated Rear Window Switch and position for two accessory switches.
12. Digital Quartz Clock*.
13. Warning Lamp Cluster.

Instrument Panel Dials and Lights



Speedometer, Odometer and Tripmeter

The Speedometer face incorporates the odometer digits to show the distance travelled in kilometers. The Speedometer is calibrated from 0 to 180 kilometres per hour (km/h).

A Tripmeter, which is set to zero by the push button, records the distance covered on a particular trip.

Tachometer (where fitted)

Petrol Engine

The Tachometer is graduated from 0-8 indicating engine revolutions in thousands per minute (r.p.m.). The section from 6-8 is indicated in YELLOW and continued or sustained operation in this section could cause serious engine damage.

Tachometer (where fitted)

Diesel Engine

The Tachometer is graduated from 0-6 indicating engine revolutions in thousands per minute (r.p.m.). The section from 5-6 is indicated in RED and continued or sustained operation in this section could cause serious engine damage.

Fuel Gauge

This gauge is electrically operated to indicate the proportionate amount of fuel contained in the fuel tank. The gauge is activated when the ignition switch is turned to the ON position.

Temperature Gauge

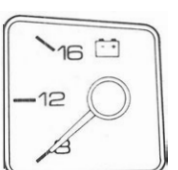
The gauge is calibrated to indicate the relative operating temperature of the cooling system. If the needle reaches the H position the engine must be stopped and allowed to cool down before attempting to locate the cause of the problem. (Refer page 59 for overheating instructions.) Check that no visible leaks are apparent from the cooling system or that the fan belt is not slipping or broken.

Oil Pressure Gauge (where fitted)

The oil pressure gauge indicates the relative operating pressure within the engine lubricating system.

Should the gauge fail to indicate a reading or if the needle moves towards the RED section of the gauge (indicating low pressure) when the engine is running above idle speed, it should be stopped and the reason for the loss of oil pressure found and corrective action taken.

Voltmeter (where fitted)



The voltmeter indicates the condition of the electrical charging system. Normally the needle will remain in the white band operating area of the dial.

Needle movement to the bottom red zone indicates a low voltage condition. Needle movement to the top red zone indicates a high voltage condition.

In either of these cases, the electrical charging system will require checking; items such as the battery, voltage regulator, drive belt or wiring and connections could be affected. A generator charge indicator light is incorporated in the dial face.

High-Beam

When the headlamps are on high beam a white symbol on a blue rectangle located between the turn signal indicators at the top of the instrument panel will light up.

Turn Signal

There are two arrow-head turn signal indicators. They are located at the top centre of the instrument panel. The appropriate indicator will flash in the direction signalled.

Hazard Warning Flashers

The two arrow-head turn signal indicators on the instrument panel will flash continuously whilst the switch located on the top of the steering column is turned on.

Electrical Digital Clock (where fitted)

Time is displayed when the ignition switch is in the "ON" position. To reset the time, open the cover and push the switches as necessary.
The function of each switch is as follows:

"D" Display switch is pushed to display time with the ignition switched off. The display goes out when display switch is released.
"H" Hour indicator is advanced one hour each time this switch is pushed.
"M" Minute indication is advanced one minute each time this switch is pushed.
The clock can be accurately set since the next minute will not display until 60 seconds after releasing the "M" switch.

Master Warning Light

MASTER WARNING

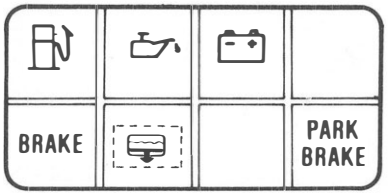
This light which is mounted in the centre of the instrument panel will come on when the ignition key is turned to ON. This light turns on when any one of the warning lights in the Warning Light Panel turns on. If the master warning light turns on when the engine is running look at the Warning Light Panel to determine which warning light is on. Refer to page 46 for appropriate action to take.

Analogue Clock (where fitted)

The clock is electrically energised, the time setting is adjusted by turning the knurled knob in the centre of the clock face to engage and rotate the dial hands.

To fulfil its function, the clock operates at all times.

Warning Lamp Cluster



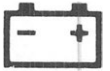
Fuel Level Warning Light (Diesel Only)

This lamp will glow when your Diesel fuel is low in the tank and needs replenishing.

Oil Pressure

The black symbol on a red rectangle will glow when the ignition switch is turned to the ON position. After the engine has been started, the light will go out and remain out. If the light should glow after the engine is running above idle, stop the engine and the reason for the loss of oil pressure should be located and corrective action taken.

Generator



The black symbol on a red rectangle will glow when the ignition switch is turned to the ON position. After the engine has been started, the light will go out and remain out. If the light should glow after the engine is running, the fault causing the problem should be located and corrective action taken.

Brake Failure Warning

BRAKE

This light glows red when ignition switch is turned to the START position and the engine is cranking. It will cease to glow when the key is released and returns to the ON position. This indicates the electrical circuit is functioning. If the red sign glows at any other time, it will indicate that there may be something wrong with the braking system. Immediately the indicator light glows, under these conditions, stop on the side of the road as carefully as possible. Do not proceed until satisfied that cautious progress is possible or that the cause of the problem has been located and rectified.

(Reference should be made to brake operations on page 38.)

Filter (Sedimentor) Indicator Light

(Diesel Only)

When the sedimentor attached to the fuel filter is filled with more than 80 cc of water, the "FILTER" indicator lamp will light up.

NOTE: If the warning signal lights up while you are driving, find a safe place to park. See instructions on page 60 on how to discharge water from the sedimentor.

Parking Brake Warning

PARK
BRAKE

When the parking brake is applied with the ignition switch in the ON position, the red sign will glow until the parking brake is fully released.

Ventilation System

Your Gemini sedan has a flow-through ventilation system for your comfort. Under reasonable conditions, it shouldn't be necessary to open the windows at any time.

Fresh air comes into the vehicle through the grille in front of the windshield, and into the passenger area through ducts in the instrument panel.

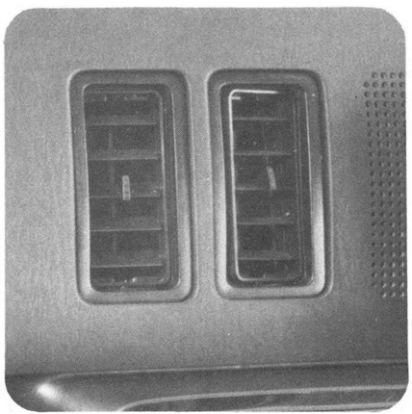
Instrument Panel Vents

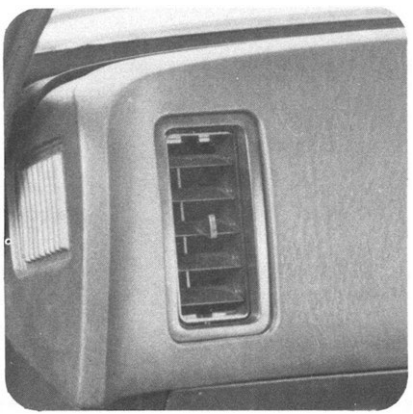
These are located in the middle (2) and one at each end of the instrument panel.

The vertical and horizontal direction of air is controlled by the lever in the centre of each grille.

The vents at each end of the instrument panel are designed to direct air onto the drivers and passengers side windows to assist in demisting, etc.

A HINT: The ventilation system will not work if the bonnet grille is allowed to become covered or clogged up with leaves, snow etc. Keep it clean and uncovered.





Operating the Controls

Distribution Control Lever (top lever)

This has four positions:

In this position air is directed mainly to the face and upper level.

This position directs the air to both the upper level (face) and the floor.

In this position the main air is directed to the floor with a small amount going to the face.

In this position the air flows mainly onto the windscreen. A small amount goes to the floor outlets.

Bottom Left Lever

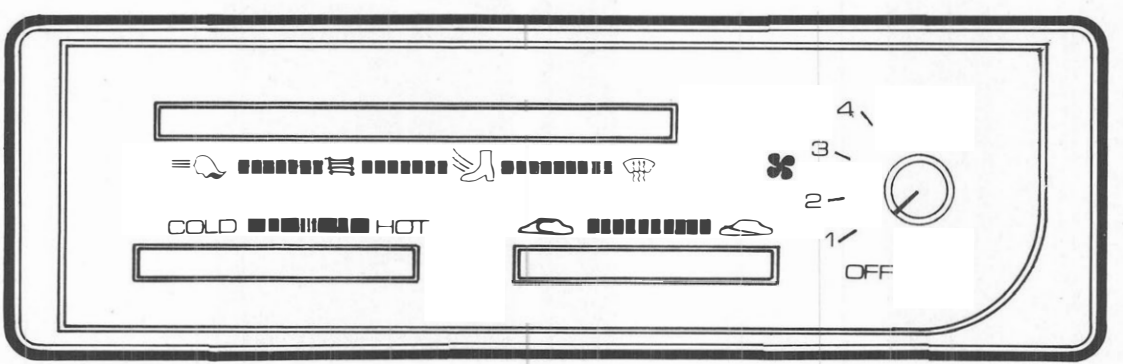
Bottom Left Lever—controls the heating. From left to right a corresponding variation of heat levels—changing from cold to hot.

Bottom Right Lever

Bottom Right Lever—controls the mode of ventilation. In the left position air within the vehicle is recircled, and in the right position fresh air is allowed to enter via the grille in front of the windshield.

Fan Switch

The fan is located on the instrument panel under the ventilation control panel. The fan switch has four positions 1, 2, 3, 4, for controlling fan speed in steps, there-by controlling the volume of incoming air.
Use the fan to boost air flow whenever you consider it necessary.



How to use the Ventilation System

Windshield defrosting

Top lever— (Defrost)

Right lever— FRESH

Left lever—as desired—depending on the weather.

Fan—as desired—depending on the weather and volume of air required.

Heating

Top lever— (BI LEVEL)

Right lever—as desired.

Left lever—HOT.

Fan—as desired.

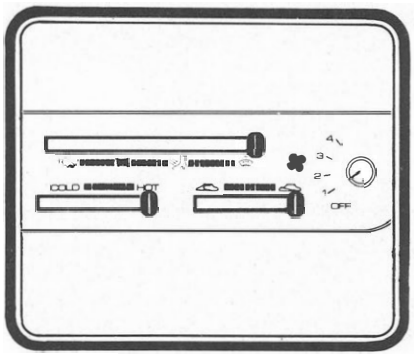
Ventilating

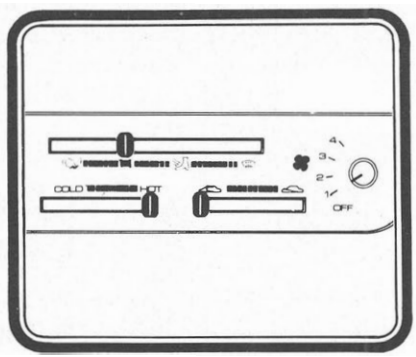
Top lever—AS DESIRED.

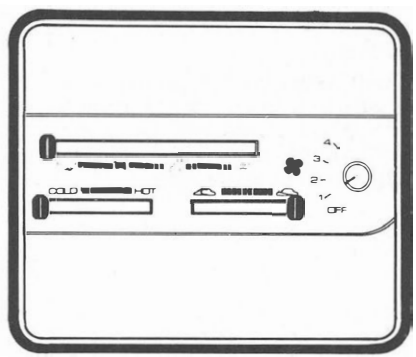
Right lever— FRESH.

Left lever—COLD.

Fan—as desired.







AM Radio

(where fitted)

Your radio has been especially made for GMH and when fitted as standard equipment is covered under the GMH New Vehicle Warranty.

Operating Instructions

ON/OFF Switch and VOLUME Control: Push the Volume control to switch the receiver ON; a second push will switch the receiver OFF. Turn the control to increase or decrease volume.

Manual Tuning Control: The receiver may be tuned at any time by means of the Manual Tuning control; this will not affect the ability of the push-buttons to recall preselected stations.

Pushbuttons: The pushbuttons enable you to tune the receiver to any of five preselected stations without the need to operate the Manual Tuning control.

Resetting Pushbuttons: You may alter the station to which any particular pushbutton is preset simply by resetting that pushbutton (see below); you may reset any or all of the pushbuttons in this way as often as you like. Although you may reset the pushbuttons in any order, it may be convenient to work along the pushbuttons from left to right, preselecting your preferred five stations, from left to right across the dial.

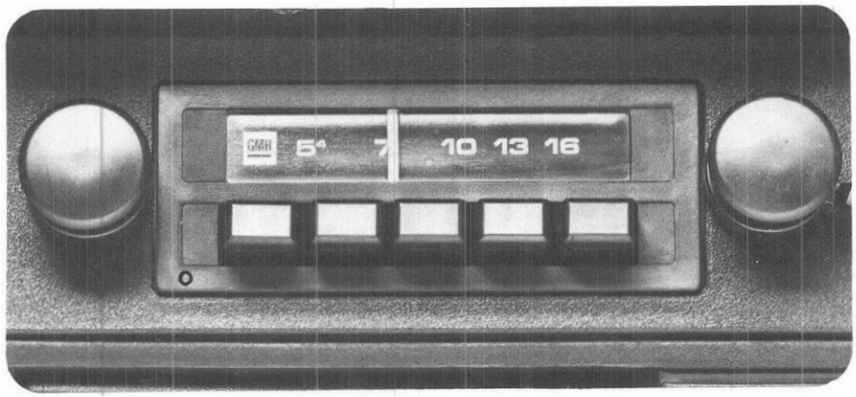
Alternatively, you may reset the pushbuttons in order of your station preference so that your favourite station is selected by the first pushbutton, your next preference by the second pushbutton, and so on.

To reset the pushbuttons to the required stations, proceed as follows:

1. Switch the receiver ON.
2. Set the VOLUME control to a higher than normal position.
3. Unlock the pushbuttons (or pushbutton) by pulling firmly outwards.
4. Accurately tune the receiver to the required station with the Manual Tuning control.

Note: Subsequent pushbutton tuning can only be as accurate as your initial setting up.

5. Lock pushbutton to the station by pushing in firmly.
6. Repeat steps 4 and 5 for each remaining station and pushbutton.



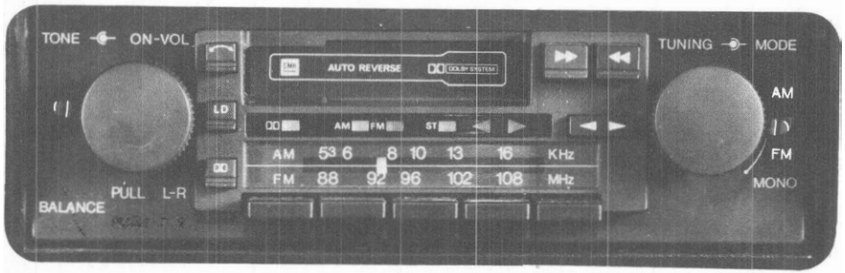
Tone Control: Set the control to give the tone you find most satisfactory. When listening to speech, it may be found beneficial to increase the treble (turn control clockwise). Outside interference will be reduced by turning the control anti-clockwise.

Lock-down Antenna: If a lock down antenna is fitted, the outermost (largest diameter) section must be fully extended, the other sections may then be raised progressively for distant reception. If it is desired to extend only the outermost section it may be necessary first to fully extend all sections, then retract the inner sections.
To preserve the finish and permit the telescopic sections to be moved up and down with ease, clean the antenna regularly with a damp cloth.

Antenna Trimmer: The antenna trimmer must be adjusted at conclusion of installation. Fully extend antenna. Tune receiver to weak station or noise near 1400 kHz (right hand side of dial). Adjust antenna trimmer by turning the trimmer clock or anti-clockwise for maximum volume.

AM/FM Radio and Stereo Cassette Tape Player (where fitted)

1. **On/Off Volume Switch**
   Turn to the right to turn the radio on and to alter volume. Turning fully to the left will turn the radio off.
2. **Tape Eject (Manual)**
   Push to eject tapes. Once a tape has been ejected the radio will play.
3. **Tone Control**
   The tone control lever is located behind the L.H. Knob (On/Off Switch).
4. **Loudness Switch**
   When listening to sound at low volume, it usually sounds like both low and high notes are missing, that is because of an acoustic character of human ears. Depressing LD button boosts low and high frequencies to compensate for the effect and give a rich sound quality even at low volume levels. This switch has less effect when the volume is louder.
5. **Balance Control**
   Pull out the On/Off Switch to balance the stereo effect on the front and rear speakers.
6. **Dolby ® Switch**
   For playing cassettes using the Dolby system, depress the button, and the Dolby noise reduction indicator lamp will illuminate. Any casette tape recorded without the Dolby system should be played back with this switch at the released (off) position.
7. **Push Button Tuning Controls**
   These allow you to tune to any of five pre-selected stations without having to adjust the tuning knob. Five buttons are available for five FM, five AM or any combination of AM, FM stations. To set the buttons to the required stations, proceed as indicated on page 50.
8. **Tuning Control**
   This control allows you to manually tune the radio.
9. **AM/FM Selector**
   A 3-way switch is located behind the tuning control. The top setting is for AM reception and the centre setting for FM. The bottom setting provides FM Mono reception for distant stations with consequent decrease in background noise level.



10. Track Change
Tape program tracks are changed by pushing this button.

11. Fast Forward/Rewind

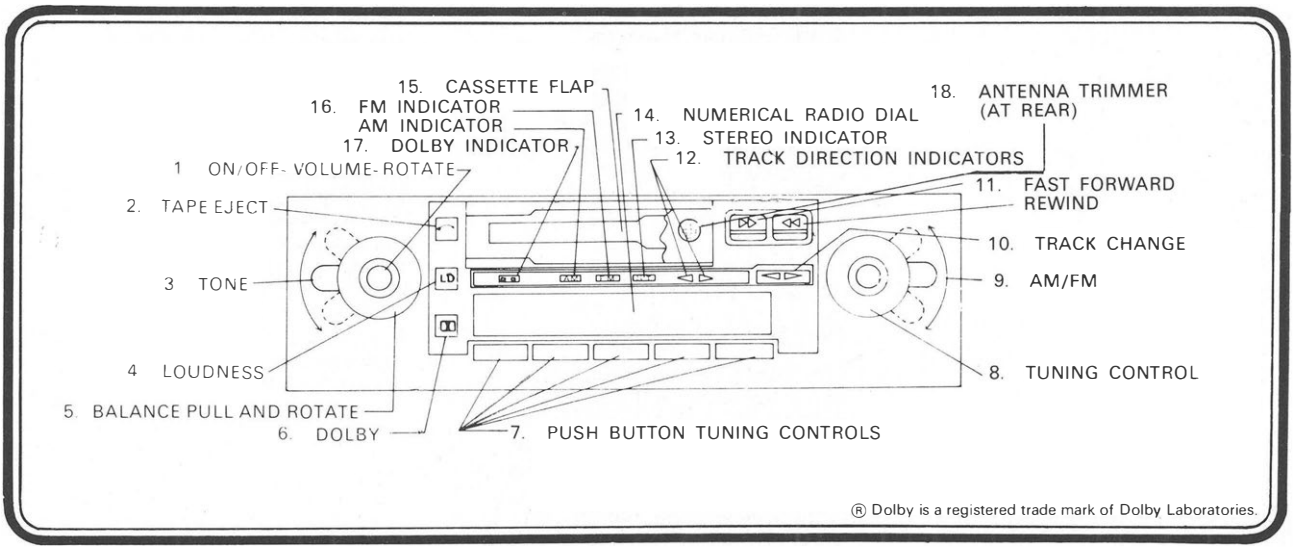
12. Track Direction Indicators

13. Stereo Indicator
This green panel illuminates when the stereo button has been set.

14. Numerical Radio Dial

15. Cassette Tape Operation
The tape system automatically overrides the radio. To play a tape turn the radio on and then insert the cassette—the radio will switch off when the cassette is fully in. When the tape starts playing adjust volume, tone and balance to suit. The cassette is ejected by using the Eject Button (No. 2) or by turning off ignition. When inserting a cassette push the cassette firmly into the slot with the flat of your finger until it hits a slot, then release the cassette which should freely drop into position. DO NOT USE ANY DOWNWARD PRESSURE.

16. AM/FM Indicators
The appropriate light will glow to indicate whether AM or FM is in use.



® Dolby is a registered trade mark of Dolby Laboratories.

17. **Dolby ® Indicator**
This lights up when Dolby Switch is engaged.

18. **Antenna Trimmer**
Tune to a position on the dial at approximately 1400 kHz and turn trimmer screw until noise is loudest. The trimmer is at the rear of the cassette compartment.

AM/FM Radio Reception

The Two Types of Radio Signals

There are two basic types of radio signals — AM or Amplitude Modulation, in which the transmitted sound causes the amplitude, or height, of the radio waves to vary — and FM or Frequency Modulation, in which the frequency of the wave is varied to carry the sound.

AM Signal Range

AM broadcast waves can curve or bend around obstructions, and thus tend to follow the curvature of the earth. The upper atmosphere (ionosphere) reflects AM signals back to earth, so stations can be heard at fairly long distances, especially after dark when the ionosphere layer rises.

FM Signal Range

FM broadcast waves do not bend, but rather reflect off some solid objects. They usually pass through the ionosphere and are not reflected back to earth. This gives them a straight line-of-sight transmission, which limits good FM reception to about 40 km.

Electrical Disturbances

Radio waves may pick up electrical disturbances during transmission. They mainly affect the wave amplitude, and thus remain a part of the AM reception. They interfere very little with the frequency variations that carry the FM signal.

AM Reception — Because AM sound is based on wave amplitude, it's not possible to filter out the electrical static without removing the sound as well. As a result, AM reception can be disrupted by such things as lightning, power lines and neon signs.

FM Reception — Because FM transmission is based on frequency variations, interference that consists of amplitude variations can be filtered out, leaving the reception relatively clear, which is the major feature of FM radio.

Spare Wheel Storage—Sedan

To remove:

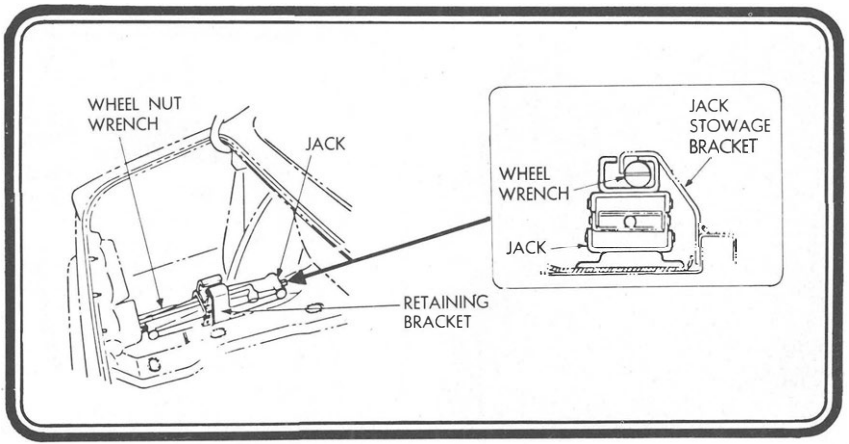
Remove the jack handle which is between the tyre and the holding strap. Release the holding strap and remove the spare wheel.

Use the jack handle to lower the jack until it is clear of its bracket and able to be removed. (The wheel nut wrench is stored in the jack head.)

To replace:

Lower the jack completely and place the wheel nut wrench in the jack head. Slide the jack and wrench into the bracket mounted on the vehicle boot floor and raise the jack with the handle until the complete assembly is held firmly in the centre by the retaining bracket.

Put the wheel and the jack handle back, tightening the restraining strap to hold both spare wheel and jack handle firmly.



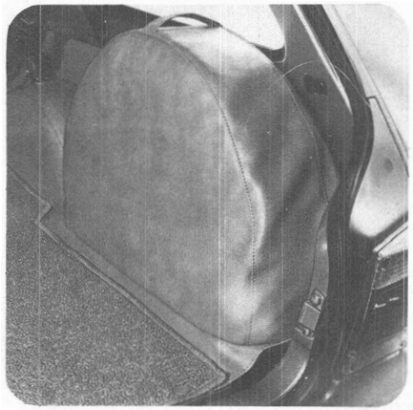
Spare Wheel Storage—Wagon and Van

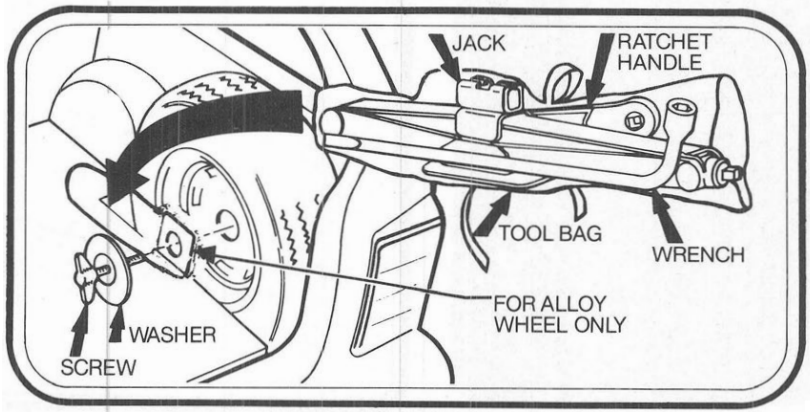
To remove:

The spare wheel is located in the floor well behind the driver's side rear wheel. Remove the trim cover on wagon model. Undo the wing screw and remove it and the large washer. Lift out the spare wheel. The jack is located in the floor well beneath the front end of the spare wheel. It is packed in a tool bag together with a ratchet handle and wheel nut wrench.

To replace:

Lower the jack completely and place it in the storage bag with the wheel nut wrench and ratchet handle as shown in the illustration. Slide the storage bag into the recess at the bottom of the spare wheel well. Replace the wheel making sure that the centre hole is lined up with the screw hole on the mounting bracket. Insert the wing screw and washer and screw it tightly to hold the wheel firmly in place. Replace the trim cover on wagon model.





Removing the Wheel Trim

Wheel covers

To remove:

Push the blade end of the wheel nut wrench between the wheel cover and the wheel and force it in about halfway.

Moving round the wheel, lightly pry the cover off at several points by twisting the wrench away from the tyre.

To replace:

Position the wheel trim so that the valve extension hole lines up with the valve stem.

At lower most point "B" place the trim in fully seated position as shown in Fig. A and hold with toe of foot.

Apply blows with palm of hand at point "C" until trim is seated, retain pressure at point "C".

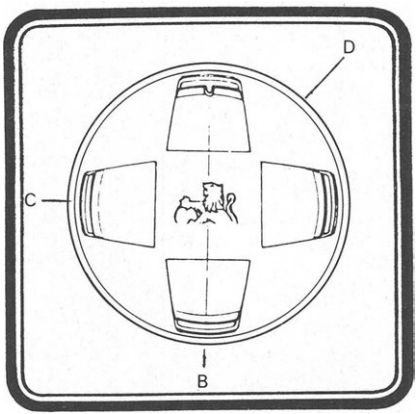
Apply blows with palm of hand at point "D" until wheel trim is fully seated.

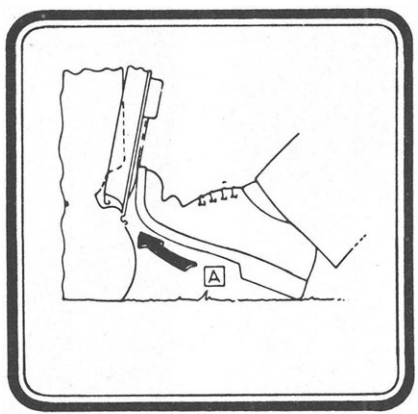
After this has been done, ensure that the trim has been completely seated all around by applying light blows with the palm of the hand in approx. 6 places evenly distributed around the trim.

Wheel Nut Covers can be prised off with the end of the wrench, and replaced by pushing them on with your hand.

Wheel Centre Cover is removed by removing the wheel nut covers and loosening the wheel nuts. Be sure to replace the wheel nuts tightly.

To replace the wheel centre cover position it over the wheel nuts and push it in until it snaps into place. Replace the wheel nut covers.





Wheel Changing

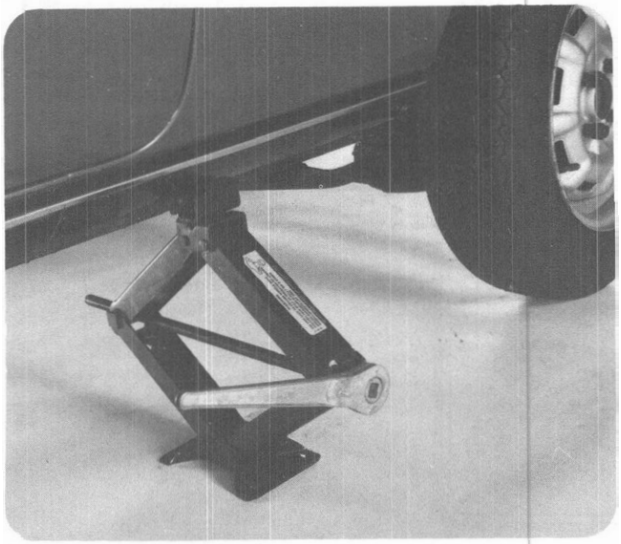
Put on the parking brake and put the vehicle in Reverse (manual) or Park (automatic).

Remove the tools and spare wheel.

Remove the wheel trim and loosen the wheel nuts slightly. Don't remove them. Put the jack under the vehicle as shown and work the handle back and forth to raise the car off the ground.

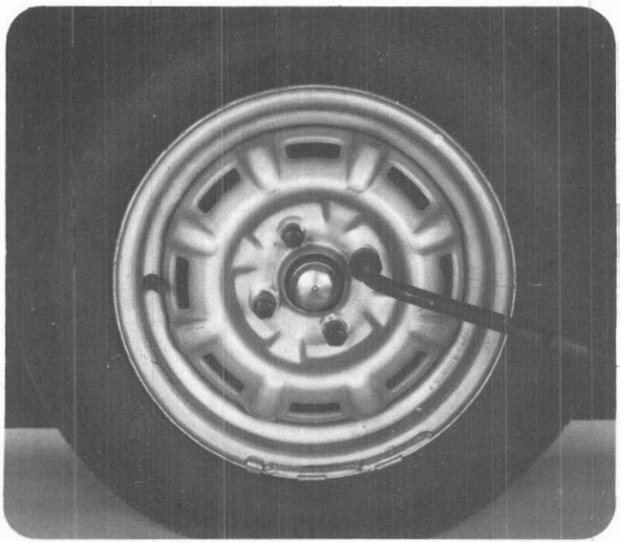
Remove the wheel nuts and change the wheel.

Tighten the wheel nuts with your fingers then with the wrench in the order shown. Lower the vehicle and tighten the wheel nuts again with the wrench.



CAUTION: As soon as practicable, after a wheel change, the wheel nut torques should be checked at a GMH Dealership, or by a competent person, to ensure correct tightness. (Refer page 87 for wheel nut torque specifications.)

Wheel Nut Tightening Sequence



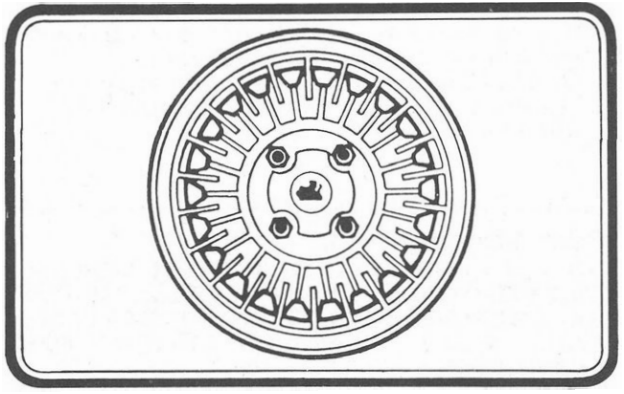
Wheel Changing Safety Hints

Cautions:

1. Carefully follow jacking instructions in order to reduce the possibility of serious personal injury.
2. The jack is designed for use ONLY when changing wheels.
3. Never get beneath the vehicle when supported by the jack only.
4. Do not start or run the engine while the vehicle is on the jack only.
5. All Passengers should be out of the vehicle when it is on the jack and the handbrake should be firmly applied.

Alloy Wheels

Optional alloy wheels are changed in the same manner as the standard wheels.



Overheating

If the temperature gauge moves to the H (Hot) position, stop by the road side and let the engine idle for about two minutes. Then turn it off and open the bonnet.

While the engine is cooling, check your fan belt for slipping or breakage and check for damage to the radiator hoses. Take care as the hoses will be hot.

When the engine is cool, check the coolant level in the radiator as follows:—

Cover the radiator cap with a heavy cloth and turn it to the left — don't press down on it. You will probably hear a hissing noise now as pressure is released. When this stops, continue to turn the cap, pressing down this time, until it can be removed.

Check the coolant level and add water if necessary. Add water with the engine idling and only when the engine is quite cool.

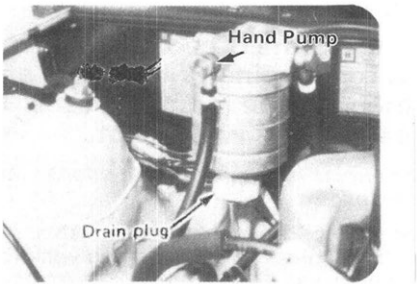
If overheating occurs again, get a mechanic to inspect the car as quickly as possible.

CAUTION: DO NOT remove the radiator cap while the engine is still hot because the cooling system will blow out scalding fluid and steam under pressure which is likely to cause serious personal injury and loss of coolant.

DIESEL—SEDIMENTOR

How to Discharge Water from the Sedimentor attached to the Fuel Filter

The fuel filter has a sedimentor chamber for settling water separated from fuel.



When the "FILTER" indicator lamp on the instrument panel lights up, water in the sedimentor chamber must be drained. The sedimentor is located beneath the fuel filter, located on the fire wall in the engine compartment.

1. When warning lamp on the instrument panel is lighted, unscrew the knurled plastic plug near the top of the filter to reveal the hand pump (plunger). Also unscrew the drain plug (plastic hex. head screw near bottom of filter). Work the hand pump in and out until 60 cc to 100 cc of water has been drained out via the plastic drain hose (**Note:** A suitable spanner for the drain plug should be carried).
2. After draining is completed, securely tighten drain plug and hand pump. Start the engine and check that no fuel leaks from drain plug. Also check that the fuel filter indicator light has turned off.

NOTE: IF WATER SEPARATOR REQUIRES FREQUENT DRAINING, HAVE THE FUEL TANK DRAINED FOR REMOVAL OF WATER AT YOUR GMH DEALER.

Replace Spin-On filter element every 20,000 kilometres.

See Service Section for details.

Starting the Engine after running out of Fuel

When the engine stops after running out of fuel, there will be air in the fuel line. After the fuel tank is refilled this air must be removed before the engine can be restarted.

1. Set the transmission into neutral.
2. Depress the clutch pedal fully.
3. Turn the ignition key to the "ON" position and crank the engine continuously for 30 seconds.
4. Wait for 30 seconds before starting the engine, in accordance with the "Engine starting procedure" described on page 33.

Push Starting

DO NOT ATTEMPT TO PUSH START A DIESEL ENGINED VEHICLE. IN AN EMERGENCY IF YOU ARE UNABLE TO START WITH A JUMPER LEAD, CALL YOUR NEAREST DEALER FOR ASSISTANCE.

Caravan or Trailer Towing

Your Gemini is designed primarily as a passenger vehicle so handling, durability and economy may be affected by towing a caravan or trailer.

Before you even think about doing this, check that the correct equipment is fitted to your car. Your GMH Dealer will help you.

Never exceed the loadings given in the table on page 63.

Running-in Period

It is best to drive your new Gemini for 1500 kilometres before towing a load. If you must tow before this do not exceed 80 km/h.

The same applies if you have a new or reconditioned engine, transmission or rear axle.

Maintenance — Automatic Transmission

More frequent vehicle maintenance is required when using your vehicle to pull a trailer. Where an automatic transmission is fitted the transmission fluid will need to be changed every 12 months or 20,000 kilometres.

Tongue Load

Your vehicle-caravan combination will handle best if the load at the attachment coupling is kept within the limits specified on page 64.

If you don't have an equalising load levelling hitch fitted then the load in the rear compartment should be reduced an amount equal to the load on the coupling.

If an equalising load levelling hitch is fitted correctly to maintain rear suspension height, you don't need to reduce the load.

Tyres

When towing, your tyres should be inflated to the maximum recommended pressure.

Electrical connection

A special wiring harness is available from your GMH Dealer or accessories stockist. This is the only system recommended by GMH and use of any other may affect your warranty.

DANGER: If you remove your tow bar be sure to have any mounting holes properly sealed. Dangerous exhaust fumes can enter through these holes.

Safe Towing

- Your vehicle will handle differently with a load behind. It's a good idea to make a couple of short distance trips with the caravan or trailer before you set off on the big one.
- Have your engine tuned before you leave.
- You should have an extended-arm mirror on **both** sides of the vehicle.
- Headlights should be re-aimed after the loaded caravan has been hitched up.
- Use a lower gear, rather than your brakes, when going down steep hills.
- If your caravan or trailer runs off the road behind you — and this is fairly common — allow the left wheels of the vehicle to run off as well. Then wait for an opportunity to steer back on to the road. A sudden attempt to steer back will make you swerve dangerously.

Loading Your Gemini

Overloading is a safety hazard and could also shorten the life of your vehicle or its parts.

Your GMH Dealer can advise you about maximum loading limits for your particular vehicle.

VEHICLE WEIGHT CHART (ACTUAL)

Model	Kerb Mass Kg	Maximum Loaded Vehicle Mass Kg
Gemini Sedan	944	1384
Gemini "SL" Sedan	953	1394
Gemini "SL/X" Sedan (Petrol)	954	1378
Gemini "SL/X" Sedan (Diesel)	1041	1450
Gemini "SL" Wagon	977	1432

Model	Kerb Mass Kg	Gross Vehicle Mass Kg		
		Total	Maximum Front Axle Load	Maximum Rear Axle Load
Gemini Van	944	1378	551	859

NOTES: 1 The actual kerb mass represents a standard vehicle without options, a full tank of fuel and no occupants.

2 Gross Vehicle Mass: The sum of the front and rear maximum axle loads must not exceed the total e.g. It is permissible to load the vehicle to the maximum rear axle load, but less than the maximum front axle load so that the total is not exceeded.

TOW BAR LOADS

Before towing a trailer or caravan, it is necessary to check that the correct equipment is fitted to the vehicle to cover both the legal and manufacturer's requirements. The matter should be discussed with your Local GMH Dealer.

PERMISSIBLE OPERATING LOADS

APPLICATION		
"A". No brakes fitted to trailer.		
"B". Fitted with independently operated trailer brakes.		
ALL MODELS		
	— A —	— B —
Maximum Trailer Weight (Tare Weight plus all load)	340 kg	680 kg
Nominal Static Weight to be imposed on the Vehicle Tow-Bar Tongue by the Trailer (10% of the Trailer Weight)	†34 kg	†68 kg

† This weight must be included as part of the load carrying capacity of the vehicle.

Towing a Disabled Vehicle

It is always preferable to have a vehicle towed by a tow truck. If this is not possible heed the following cautions.

Never tow a vehicle on four wheels with the ignition switch in LOCK or ACC.

Never tow a vehicle at speeds over 80 km/h.

Power assisted brakes, don't tow unless you use a solid connection between the vehicles or unless the vehicle being towed has its engine running.

Don't attach lifting hooks or chains to bumper bars or bumper brackets, or to any damaged part of the vehicle.

Only the driver should be in a towed vehicle.

Vehicles with damaged transmissions must not be towed unless the propeller shaft has been removed.

Automatic vehicles must not be towed for more than 55 km or at over 55 km/h unless the propeller shaft is removed.

In Case of Emergency

PUSH STARTING—Petrol Engine, Manual Transmission vehicles only.

Put the vehicle in Neutral and turn the ignition switch to ON. Release the hand brake and have the vehicle pushed. When the vehicle reaches a speed of about 15 km/h, press in the clutch, select top gear and slowly let the clutch pedal come back up. When the vehicle starts, depress the clutch and shift back to neutral, pull over and let the engine idle for a while.

STARTING WITH A JUMPER LEAD

This can be a dangerous procedure. If, for some reason, you can't do it **exactly** as recommended here — leave the job to a mechanic.

1. The booster battery must be the same voltage as yours (12 volts) and be negatively grounded i.e. earth wire to negative terminal, if it is fitted to another vehicle. Read the other vehicle's owner manual to check.

2. Put both vehicles in either PARK (Automatic) or NEUTRAL (Manual) and turn off all lights. Ensure vehicles are not in contact with each other.
3. Remove vent caps or covers from both batteries and replace loosely over the cell openings.
4. Attach one end of one jumper lead to the positive terminal of the vehicle battery and the other end on the positive terminal of the booster battery. The positive terminals will be marked either by a red colour, a +, or P. Attach one end of the other jumper lead to the negative terminal of the booster battery (black colour, —, or N), and the other end to the alternator mounting bracket on your vehicle. **Don't attach** it to the **negative terminal** of the **dead battery**.
5. Start the engine of the boosting vehicle. Let run for a few minutes, then start your engine.
6. Reverse procedure 4 exactly to remove the jumper leads.

Battery Caution

Never expose a battery to open flame or electric sparks.

Don't allow battery acid to contact eyes, skin, fabric or painted surfaces. If you do get it on yourself, wash immediately with water and ring a doctor.

Wear eye protection when working on or near a battery.

Remove any metal jewellery before working on a battery.

Keep batteries and battery acid out of reach of children.

Emission Control Systems

IMPORTANT: This is an explanation of the operation of the emission control systems fitted to your new vehicle.

Introduction

There are three areas from which pollutants are emitted:

(a) Exhaust System
(b) Crankcase
(c) Fuel System.

A number of controls have been installed by General Motors-Holden's Limited to control the amount of pollutants emitted from your new vehicle.

The following has been produced to assist you in understanding their function by briefly explaining the operation of the various components involved.

Sources of Emissions

During the combustion process in an automotive engine, some of the fuel (hydrocarbons) fails to burn and is discharged into the engine crankcase or exhaust system. Additionally hydrocarbons are emitted into the atmosphere through evaporation of petrol vapors from the fuel tank and carburettor. Of the total hydrocarbons coming from uncontrolled automobiles, about 25% are emitted from the crankcase, 20% from the fuel system and 55% from the engine exhaust.

In addition to hydrocarbons, carbon monoxide and oxides of nitrogen are also formed during the combustion process. These are also discharged into the exhaust system.

What General Motors Has Done

Since research on the control of vehicle emissions first began General Motors world-wide resources have developed a number of control systems which are highly effective in reducing undesirable emissions. These systems are discussed in this publication.

Exhaust Emissions

The exhaust of a petrol automobile engine contains three significant air pollutants; carbon monoxide, unburned hydrocarbons, and oxides of nitrogen. It also contains small amounts of solid matter — called particulates — made up largely of lead compounds from the tetraethyl lead used to increase the octane rating of petrol.

Control of hydrocarbon emissions is important since, when subjected to sunlight under certain conditions, they may react with other gases to form photochemical smog. Carbon monoxide does not enter into the complex of photochemical smog reaction, but it is itself a pollutant and, thus, has been controlled to prevent high atmospheric concentrations.

Exhaust Emission Control Systems

Controlled Combustion System (CCS) Components

CARBURETTOR

The carburettor has been calibrated to give a lean mixture of a good quality, particularly at idle or during slow speed operation.

AUTOMATIC CHOKE

An electrically heated metal strip coil is used to open the choke. As the metal strip heats up the choke progressively comes out of operation.

DISTRIBUTOR

The advance curve of the ignition distributor contributes to meeting the emission limits.

IDLE STOP SOLENOID

An idle stop solenoid, shuts off the idle fuel mixture when the ignition switch is turned off, to reduce the possibility of engine run-on.

COOLING SYSTEM THERMOSTAT

The thermostat opening temperature has been revised to meet the requirements of the system during engine warm-up.

Coasting Richer System (CR)

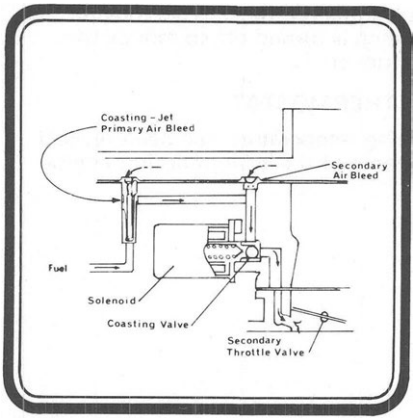
The Coasting Richer System fitted to Gemini manual transmission vehicles, is an independently operated auxiliary fuel system operated by a solenoid on the carburettor. The solenoid retracts a plunger that allows an air/fuel mixture to enter under the secondary throttle valve. This mixture brings the air/fuel ratio back into balance for efficient combustion while the vehicle is operating under closed throttle conditions in third or fourth gear.

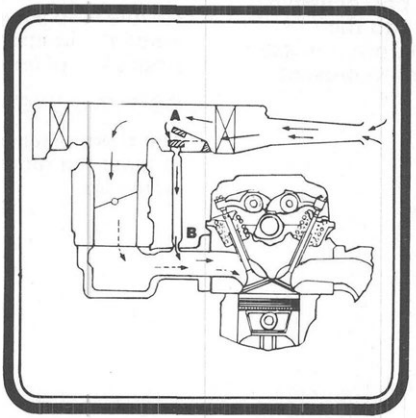
Hot Idle Compensator System (HIC)

Located in the air cleaner the Hot Idle Compensator valve is operated by a bi-metallic arm (A). As the temperature in the air cleaner reaches approximately 47°C the valve opens and allows filtered air to enter through a tube into the intake manifold (B). This increases idle speed and air flow, leaning off the air fuel mixture and thus reducing hydrocarbon and carbon monoxide content. It also gives a smoother idle as intake air temperature increases.

Vacuum Advance Control (VAC) System

This system is designed to control the vacuum signal available to the vacuum advance mechanism of the distributor. A "ported" vacuum spark advance system is used to optimise emission control as well as vehicle performance. When the throttle is in the idle position, the "port" which is above the throttle valve, has no vacuum present. As the throttle opens the port is uncovered providing vacuum advance for normal economy operation.

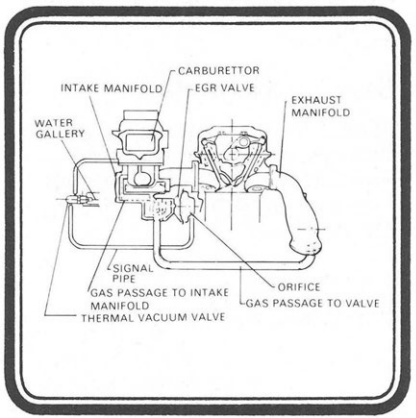




Exhaust Gas Recirculation (EGR) System

This system introduces controlled quantities of exhaust gas into the inlet manifold resulting in lower peak combustion temperatures in the combustion process which, in turn, reduces the formation of nitrogen oxides.

A thermal vacuum valve opens the vacuum line to the exhaust gas recirculation valve only after the engine has reached a predetermined temperature. At this stage the valve to a ported vacuum signal from the carburettor opens.

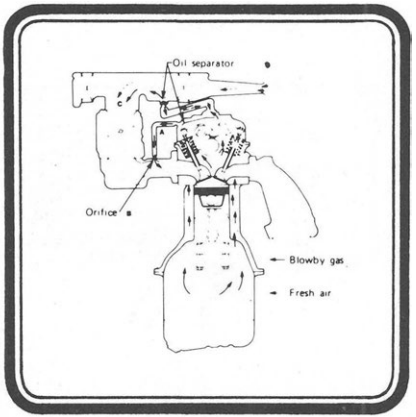


Crankcase Emission Control System

Positive Crankcase Ventilation (PCV) System

The purpose of the system is to draw the blow-by gases out of the crankcase, into the intake manifold system and thus recycle these gases through the combustion process in the cylinders.

At idle and during normal driving conditions gases are drawn out of the crankcase via a hose (A) through the restricted orifice (B) into the intake manifold. During acceleration or constant high speed operation some of the blow-by gas is drawn into the carburettor via the air cleaner (C).



Crankcase Emissions

Emission of hydrocarbons from the engine crankcase is another source of automotive air pollution. This emission occurs in the following manner.

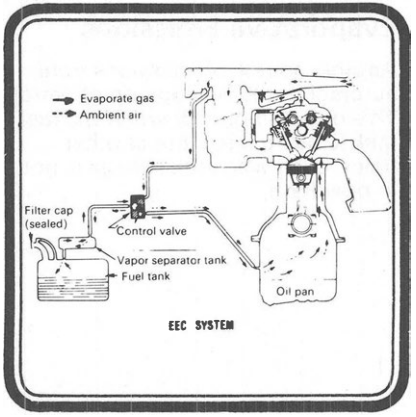
During the combustion process in all petrol engines, some gases escape past the piston rings and into the crankcase. These gases contain unburned fuel. This "blow-by" occurs because of the very high pressures in the combustion chambers.

Evaporative Emissions

Another source of emissions from automobiles is evaporation of petrol. This occurs, not only when the fuel tank is being filled, but at other times, even when the vehicle is not in operation.

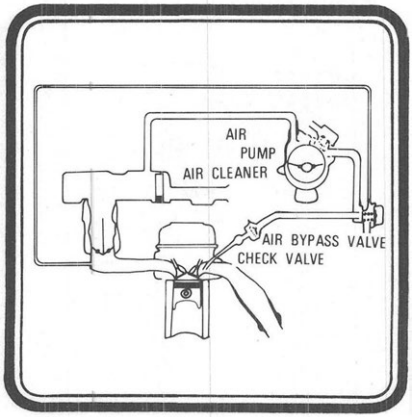
Evaporative Emission Control (EEC) System

The fuel vapours are directed from the liquid/vapour separator tank to the engine oil pan and purged via the PCV system. In order to prevent vapours flowing to the air cleaner, the relief valve on the air cleaner side of the Control Valve remains closed while the check valve to the crankcase is open. The relief valve also compensates pressure/vacuum in the fuel tank.



Air Injection Reaction System

This system reduces hydrocarbon and carbon monoxide emissions by introducing controlled quantities of air into the hot exhaust gas, so that the combustion process can continue. Filtered air is taken from the air cleaner by means of a pump and conducted by means of hoses and steel tubing to the individual exhaust ports where it is injected close to the valve. To prevent backfire in the exhaust system during deceleration an air bypass valve momentarily diverts the injection air flow from the exhaust.



A check valve is located at the inlet to each air manifold to prevent backflow of hot exhaust gas into the air injection hoses and pump.

Maintenance

The required emission control systems maintenance operations presented in this Owner's Handbook should be performed by an authorized GMH Dealer.

Vehicle Operations

The maintenance instructions contained in the Owner Handbook, are based on the assumption that your vehicle will be used as designed and is operated in accordance with the instruction provided in the handbook.

Service Manuals

Service manuals, providing greater detail on emission systems, are available for purchase by owners. These are available from a GMH Dealer or from:

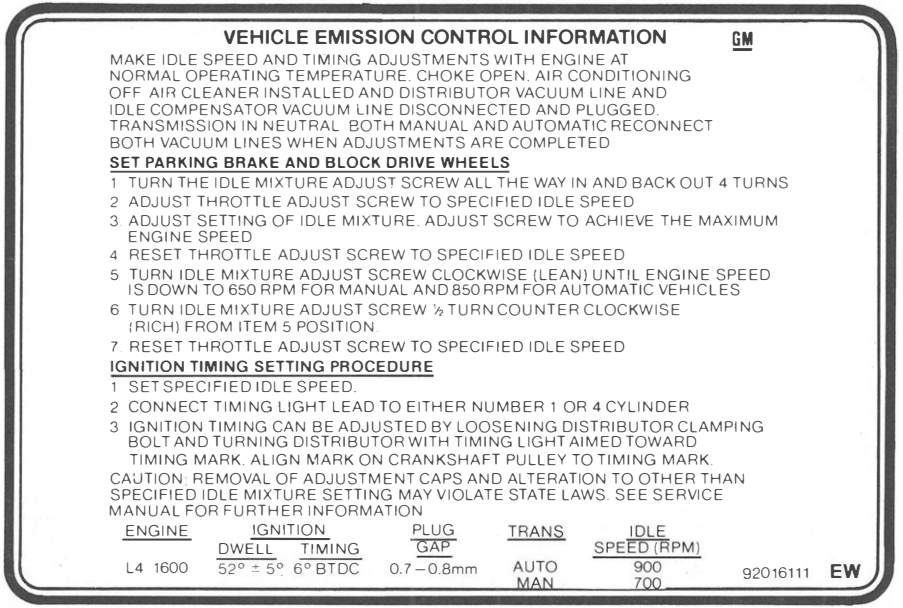
STAN H. EARLE,
46 ISABELLA STREET,
MOORABBIN, 3189 VIC.

Service Replacement Parts

The emission control systems of your new vehicle were designed, built and tested using GM parts and the vehicle is certified as being in conformity with Australian Design Rules covering emissions. Accordingly, it is recommended that any replacement parts used for required maintenance services or for the repair of emission control systems be new GM parts. Use of replacement parts which are not of equivalent quality may impair the effectiveness of such systems, and may adversely affect your vehicle Warranty.

Vehicle Emission Control Information Label

This label is located on the underside of the engine hood and provides all relative specifications required to correctly tune the engine of your Gemini.



VEHICLE EMISSION CONTROL INFORMATION GM

MAKE IDLE SPEED AND TIMING ADJUSTMENTS WITH ENGINE AT NORMAL OPERATING TEMPERATURE. CHOKE OPEN. AIR CONDITIONING OFF. AIR CLEANER INSTALLED AND DISTRIBUTOR VACUUM LINE AND IDLE COMPENSATOR VACUUM LINE DISCONNECTED AND PLUGGED. TRANSMISSION IN NEUTRAL. BOTH MANUAL AND AUTOMATIC RECONNECT BOTH VACUUM LINES WHEN ADJUSTMENTS ARE COMPLETED

SET PARKING BRAKE AND BLOCK DRIVE WHEELS

1 TURN THE IDLE MIXTURE ADJUST SCREW ALL THE WAY IN AND BACK OUT 4 TURNS
2 ADJUST THROTTLE ADJUST SCREW TO SPECIFIED IDLE SPEED
3 ADJUST SETTING OF IDLE MIXTURE. ADJUST SCREW TO ACHIEVE THE MAXIMUM ENGINE SPEED
4 RESET THROTTLE ADJUST SCREW TO SPECIFIED IDLE SPEED
5 TURN IDLE MIXTURE ADJUST SCREW CLOCKWISE (LEAN) UNTIL ENGINE SPEED IS DOWN TO 650 RPM FOR MANUAL AND 850 RPM FOR AUTOMATIC VEHICLES
6 TURN IDLE MIXTURE ADJUST SCREW ½ TURN COUNTER CLOCKWISE (RICH) FROM ITEM 5 POSITION.
7 RESET THROTTLE ADJUST SCREW TO SPECIFIED IDLE SPEED

IGNITION TIMING SETTING PROCEDURE

1 SET SPECIFIED IDLE SPEED.
2 CONNECT TIMING LIGHT LEAD TO EITHER NUMBER 1 OR 4 CYLINDER
3 IGNITION TIMING CAN BE ADJUSTED BY LOOSENING DISTRIBUTOR CLAMPING BOLT AND TURNING DISTRIBUTOR WITH TIMING LIGHT AIMED TOWARD TIMING MARK. ALIGN MARK ON CRANKSHAFT PULLEY TO TIMING MARK.

CAUTION: REMOVAL OF ADJUSTMENT CAPS AND ALTERATION TO OTHER THAN SPECIFIED IDLE MIXTURE SETTING MAY VIOLATE STATE LAWS. SEE SERVICE MANUAL FOR FURTHER INFORMATION

ENGINE	IGNITION		PLUG GAP	TRANS	IDLE SPEED (RPM)
	DWELL	TIMING			
L4 1600	52° ± 5°	6° BTDC	0.7 – 0.8mm	AUTO	900
				MAN	700

92016111 EW

Section 4:

Owner Relations
Authorised GMH Dealers

We want you to be happy with your new Gemini and with the people you deal with while you have the vehicle.

Normally, any problems which may arise with the sales transaction, operation or servicing of your vehicle will be handled by your Dealer's Sales and Service department.

We realise however that, with the best intentions, misunderstandings do occur sometimes.

If you have a problem that has not been settled to your satisfaction here's what to do:

Step 1:

Discuss the problem with one of the Dealer's management people. If you feel you haven't got satisfaction from the Sales Manager or Service Manager — go to the General Manager or the Dealer himself.

Step 2:

If it seems that no-one at the dealership can help fully, write to the GMH Owner Relations Manager in your State outlining your problem and including your name, address and telephone number; the vehicle model number and vehicle identification number; the vehicle delivery date and odometer reading and the Dealer's name and address. This information will be on your Vehicle Identification Certificate on the inside front cover of this manual.

Step 3:

By now you should have satisfaction. If not, you can write to the National Owner Relations Manager, GMH Sales Pty Ltd, Box 1714 G.P.O. Melbourne 3001.

Always try to sort things out at the Dealership. GMH Owner Relations Managers will have to refer the problem back to the Dealer.

GMH Owner Relations Managers

QUEENSLAND
General Motors-Holden's Sales Pty. Ltd.,
Box 728, G.P.O.,
BRISBANE, QLD. 4001.

NEW SOUTH WALES AND AUSTRALIAN CAPITAL TERRITORY
General Motors-Holden's Sales Pty. Ltd.,
Box 481, P.O.,
EDGECLIFF, N.S.W. 2027.

VICTORIA AND TASMANIA
General Motors-Holden's Sales Pty. Ltd.,
Victorian Zone Service Division,
Box 548D, G.P.O.,
MELBOURNE 3001.

SOUTH AUSTRALIA AND NORTHERN TERRITORY
General Motors-Holden's Sales Pty. Ltd.,
Box 221, P.O.,
ELIZABETH, S.A. 5112.

WESTERN AUSTRALIA
General Motors-Holden's Sales Pty. Ltd.,
P.O. Box 426,
WEST PERTH, W.A. 6005.

Authorised GMH Dealers

(Note: Dealership names and locations listed are effective as at 1/11/83. These may change from time to time without notice)

NEW SOUTH WALES — Metropolitan Dealers

ARNCLIFFE
Suttons Motors (Arncliffe) Pty. Ltd.,
93 Princes Highway

ASHFIELD
Muirs Motors (Ashfield) Pty. Ltd.,
252 Parramatta Road

BALGOWLAH
Ross Hannon Holden
164 Condamine Street

BAULKHAM HILLS
Tony Packard Holden
Cnr. Victoria Avenue & Windsor Road

BELMONT
Young & Green (Belmont) Pty. Ltd.,
444 Pacific Highway

BLACKTOWN
Townsend Motors
125 Main Street

CABRAMATTA
Ron Hodgson Holden
266 Hume Highway

CAMPBELLTOWN
Clintons Motors Pty. Ltd.,
3-17 Queen Street

CARDIFF
Brian Kelly Holden
35-39 Macquarie Road

CHATSWOOD
Sundell Holden
815-843 Pacific Highway

CHULLORA
Suttons Motors (Chullora) Pty. Ltd.,
Cnr. Hume Highway & Waterloo Road

CROW'S NEST
J. N. Caldwell (Holdings) Pty. Ltd.,
1 Alexander Street

DEE WHY
Graham Patching Holden
Cnr. May and Mooramba Roads

GOSFORD
MKL Gosford Motors Pty. Ltd.,
131 Henry Parry Drive

GOSFORD
Noble Motors
Pacific Highway

HOMEBUSH
Suttons Motors (Homebush)
112 Parramatta Road

HORNSBY
John A. Gilbert Pty. Ltd.,
90 Pacific Highway

KINGSFORD
John Pelligrini Holden
263-271 Anzac Parade

KINGSWOOD
W. L. Chapman Pty. Ltd.,
107-119 Gt. Western Highway

LAKEMBA
Nash Holden
1018 Canterbury Road

LIVERPOOL
A. C. McGrath & Company,
Cnr. Castlereagh St. & Hume Highway

LIVERPOOL
Pat Cullen's Garage,
324-360 Hume Highway

MIRANDA
Greg Ball Holden
1-3 Kiora Road

MOSMAN
Norman G. Booth Properties Ltd.,
501 Military Road

NEWCASTLE
Young & Green Pty. Ltd.,
745 Hunter Street

NEWPORT BEACH
Sundell Holden
Barrenjoey Road

PADSTOW
Purnell Bros. Holden
19 Davies Road

PARRAMATTA
Fair Deal Car Sales Parramatta
65 Church Street

PARRAMATTA
Hillsdon's Pty. Ltd.,
87 Church Street

PENNANT HILLS
Les Vagg Holden
351-355 Pennant Hills Road

RANDWICK
Boyded Randwick,
265 Avoca Street

ROCKDALE
C. V. Holland
571 Princes Highway

RYDE
Muirs Motors (Ryde) Pty. Ltd.,
603-605 Victoria Road

ST. MARY'S
Lance Motors Pty. Ltd.,
Corner Glossop & Harris Streets

SPRINGWOOD
Kerry's Motors Pty. Ltd.,
28 Great Western Highway

TORONTO
Young & Green (Toronto) Pty. Ltd.,
Carey Street

WINDSOR
Hawkesbury Valley Motors,
122 George Street.

WARILLA
Wilson's Warilla Pty. Ltd.,
29 Shellharbour Road

WOLLONGONG
Dwyers Pty. Ltd.,
31-33 Crown Street

WOLLONGONG
Boyded (North Wollongong)
Cnr Station & Flinders Streets **Pty. Ltd.,**

WYONG
W. M. Holden
Pacific Highway

NEW SOUTH WALES —

Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ADELONG
- ALBURY
- ARMIDALE
- BALLINA
- BARADINE
- BARHAM
- BARRABA

- BATHURST
- BEGA
- BELLINGEN
- BLAYNEY
- BOMBALA
- BOURKE
- BOWRAL
- BREWARRINA
- BROKEN HILL
- CANOWINDRA
- CASINO
- CESSNOCK
- COBAR
- COFF'S HARBOUR
- CONDOBOLIN
- COOLAMON
- COOMA
- COONABARABRAN
- COONAMBLE
- COOTAMUNDRA
- COROWA
- COWRA
- CROOKWELL
- CULCAIRN
- DENILIQUIN
- DORRIGO
- DUBBO
- DUNGOG
- EDEN
- FINLEY
- FORBES
- GILGANDRA
- GLEN INNES
- GLOUCESTER
- GOULBURN
- GRAFTON SOUTH
- GRENFELL
- GRIFFITH
- GULARGAMBONE
- GUNDAGAI
- GUNNEDAH
- GUNNING
- GUYRA
- HARDEN
- HAY
- HOLBROOK
- INVERELL
- JERILDERIE
- JUNEE
- KANDOS
- KATOOMBA
- KEMPSEY
- KIAMA
- KURRI KURRI
- KYOGLE
- LEETON
- LISMORE
- LITHGOW
- MACLEAN
- MACKSVILLE
- MAITLAND
- MILTON
- MOLONG
- MOREE
- MORUYA
- MOSS VALE
- MUDGEE
- MULLUMBIMBY
- MUNGINDI
- MURWILLUMBAH
- MUSWELLBROOK
- NARRABRI
- NARRANDERA
- NARROMINE
- NOWRA
- NYNGAN
- ORANGE
- PARKES
- PEAK HILL
- PORT MACQUARIE
- QUIRINDI
- TAMWORTH
- TAREE
- TEMORA
- TENTERFIELD
- TOTTENHAM
- TULLAMORE
- TUMBARUMBA
- TUMUT
- TWEED HEADS
- WAGGA
- WALCHA
- WALLA WALLA
- WALGETT
- WARIALDA
- WARREN
- WAUCHOPE
- WELLINGTON
- WEST WYALONG
- WINGHAM
- WOODENBONG
- YASS
- YOUNG

VICTORIA — Metropolitan Dealers

BENTLEIGH
Boyanton Holden
280 Centre Road

BERWICK
Ross Holden
Princes Highway

BRAYBROOK
Kevin Dennis Holden
272 Ballarat Road

BUNDOORA
Tony Davies Holden
413 Grimshaw Street

BURWOOD
Dustings Hillyer Holden
1200 Toorak Road

CAULFIELD
Booran Holden
1049 Glenhuntly Road

CHELSEA
Harrison Holden
370 Nepean Highway

CHELTENHAM
Balmoral Holden
1212 Nepean Highway

DANDENONG
Graeme Blanchard Holden
Princes Highway

DONCASTER
Lance Dixon Holden
601 Doncaster Road

ELSTERNWICK
Reg. Hunt Motors Pty. Ltd.,
77 Nepean Highway

ESSENDON
Preston Motors (Essendon) Pty. Ltd.,
201-211 Keilor Road

FAWKNER
M. & G. Mantello Holden
1263 Sydney Road

FERNTREE GULLY
Neilson Holden F.T.G.,
980 Burwood Road

FOOTSCRAY
Alan Mance Holden
435 Barkly Street

FRANKSTON
Bayside Holden
140 Dandenong Road

GEELONG
R. & B. Smith Pty. Ltd.,
510 Moorabool Street

GEELONG
Winter & Taylor (Sales) Pty. Ltd.,
23 Cavendish Street

GLEN WAVERLEY
Geoff Brady Holden
565-577 Springvale Road

HASTINGS
McRae Motors Pty. Ltd.,
762 Flinders Road

HEIDELBERG WEST
Arthur Ellis Holden
66 Bell Street

LILYDALE
Noel Dight Holden
Main Street

MORNINGTON
Peninsula Holden
Cnr Nepean Highway & Tyabb Road

OAKLEIGH
Garry & Warren Smith Pty. Ltd.,
1575 Dandenong Road

PRESTON
Graham Hunt Holden
518 High Street

RINGWOOD
Bill Patterson Holden
45-57 Maroondah Highway

SOUTH MELBOURNE
John Martin Holden
132 Sturt Street

WERRIBEE
Ballan Holden
Princes Highway

WEST MELBOURNE
Reg Hunt Holden
577 King Street

VICTORIA — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ALEXANDRA
- ARARAT
- BACCHUS MARSH
- BAIRNSDALE
- BALLARAT
- BENALLA
- BENDIGO
- BIRCHIP
- BOORT
- CAMPERDOWN
- CASTERTON
- CASTLEMAINE
- CHARLTON
- COBRAM
- COHUNA
- COLAC
- COLERAINE
- CORRYONG
- DAYLESFORD
- DIMBOOLA
- DONALD
- DROUIN
- ECHUCA
- EUROA
- FOSTER
- HAMILTON
- HEATHCOTE
- HOPETOUN
- HORSHAM
- KANIVA
- KERANG
- KOOWEERUP
- KORUMBURRA
- KYABRAM
- KYNETON
- LEONGATHA
- MAFFRA
- MANSFIELD
- MARYBOROUGH
- MILDURA
- MINYIP
- MORTLAKE
- MORWELL
- MURRAYVILLE
- NAGAMBIE
- NHILL
- NULLAWIL
- NYAH
- ORBOST
- OUYEN
- PORTLAND
- QUAMBATOOK
- RAINBOW
- ROCHESTER
- RUTHERGLEN
- SALE
- SEA LAKE
- SEYMOUR
- SHEPPARTON
- ST. ARNAUD
- STAWELL
- SWAN HILL
- TALLANGATTA
- TIMBOON
- TRARALGON
- UNDERBOOL
- WANGARATTA
- WARBURTON
- WARRACKNABEAL
- WARRNAMBOOL
- WODONGA
- WONTHAGGI
- WYCHEPROOF
- YARRAM
- YARRAWONGA

AUSTRALIAN CAPITAL TERRITORY

BELCONNEN
John Wright Holden
Josephson Street

BRADDON
Beazley & Bruce (ACT) Pty. Ltd.
44 Mort Street

PHILLIP
Commonwealth Motors Pty. Ltd.
158 Melrose Drive

QUEENSLAND — Metropolitan Dealers

ALBION
Bill Harrison Car Sales
Frodsham St. & Crosby Rd.

ASPLEY
Zupps (Aspley) Pty. Ltd.,
1442 Gympie Road

CLEVELAND
Russell Smith Holden
Cnr Queen & Doig Streets

IPSWICH
Zupps Holden
Warwick Rd & Churchill St.

MOOROOKA
John Sivyer Holden
1060 Ipswich Road

MT. GRAVATT
Zupps Motors Pty. Ltd.,
1310 Logan Road

NEWSTEAD
Eagers Retail Pty. Ltd.,
95 Breakfast Creek Road

NUNDAH
Eagers (Northside)
1319 New Sandgate Road

PETRIE
North Pine Motors Pty. Ltd.,
Gympie Road

REDCLIFFE
Village Holden
425 Elizabeth Avenue

SPRINGWOOD
Midways Holden
Pacific Highway & Brennan St.

TARINGA
Centenary Holden
135 Moggill Road

WINDSOR
Leach Motors
146 Newmarket Road

WYNNUM
Doug Barton Holden
200 Tingal Road

QUEENSLAND — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- ATHERTON
- AUGATHELLA
- AYR
- BEAUDESERT
- BEERWAH
- BILOELA
- BOWEN
- BUNDABERG
- CABOOLTURE
- CAIRNS
- CALOUNDRA
- CHARLEVILLE
- CHARTERS TOWERS
- CLERMONT
- CLONCURRY
- CUNNAMULLA
- DALBY
- DIRRANBANDI
- EMERALD
- GATTON
- GLADSTONE
- GOONDIWINDI
- GYMPIE
- INGHAM
- INNISFAIL
- JULIA CREEK
- KILCOY
- KINGAROY
- LAIDLEY
- LONGREACH
- MACKAY
- MAREEBA
- MONTO
- MOURA
- MT. ISA
- MURGON
- NAMBOUR
- NANANGO
- PROSERPINE
- QUILPIE
- ROCKHAMPTON
- ROMA
- SOUTHPORT
- SPRINGSURE
- STANTHORPE
- ST. GEORGE
- TARA

- TOOWOOMBA
- TOWNSVILLE
- TULLY
- WARWICK
- WINTON

SOUTH AUSTRALIA — Metropolitan Dealers

ADELAIDE
City Holden,
203-221 Grenfell Street

ELIZABETH
Peter Page Holden
Elizabeth Way

GLENELG
John H. Ellers Pty. Ltd.,
282 Brighton Road

MALVERN
Claridge Motors Pty. Ltd.,
361-367 Unley Road

MILE END
United Motors Retail
71 West Beach Road

PORT ADELAIDE
Smith Motor Co. Pty. Ltd.,
171 Commercial Road

VALLEY VIEW
Plaza Holden
817-839 North East Road

SOUTH AUSTRALIA — Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for Addresses and Telephone Numbers.

- BALAKLAVA
- BERRI
- BURRA
- CEDUNA
- CLEVE
- CRYSTAL BROOK
- CUMMINS
- GLADSTONE
- JAMESTOWN
- KADINA
- KEITH
- KINGSCOTE
- KINGSTON
- LAMEROO
- LOXTON
- MAITLAND
- MALLALA
- MENINGIE
- MILLICENT
- MINLATON
- MT. BARKER
- MT. GAMBIER
- MURRAY BRIDGE
- NARACOORTE
- ORRORO0
- PETERBOROUGH
- PORT AUGUSTA
- PORT LINCOLN
- PORT PIRIE
- QUORN
- RENMARK
- STRATHALBYN
- TANUNDA
- WAIKERIE
- WHYALLA
- WUDINNA
- YANKALILLA

WESTERN AUSTRALIA — Metropolitan Dealers

CANNINGTON
Brian Gardner Holden
1308 Albany Highway

FREMANTLE
Shack Motors
64 Queen Victoria Street

GOSNELLS
Lance Gibbons Holden
2325 Albany Highway

MELVILLE
Melville Motors Pty. Ltd.,
532-536 Canning Highway

MIDLAND
John Goldie Holden
161 Great Eastern Highway

MORLEY
Metro Motors Pty. Ltd.,
212 Walter Road

NAVAL BASE
Shack Motors Cockburn Pty. Ltd.,
Rockingham Road

OSBORNE ARK
North City
Cnr. Scarborough Beach Rd.
& Harbourne Street

PERTH
City Motors
505 Newcastle Street

VICTORIA PARK
Young's Holden
529 Albany Highway

WANNEROO
Phoenix Holden
316 Berriman Drive

WESTERN AUSTRALIA— Country Dealers & Service Dealers

Consult your local Yellow Pages under Motor Cars—New for addresses and Telephone Numbers.

- ALBANY
- BEVERLEY
- BOYUP BROOK
- BROOKTON
- BRUCE ROCK
- BUNBURY
- BUSSELTON
- CARNAMAH
- CARNARVON
- COLLIE
- CORRIGIN
- CRANBROOK
- DALWALLINU
- ESPERANCE
- GERALDTON
- GNOWANGERUP
- GOOMALLING
- KALGOORLIE
- KATANNING
- KELLERBERRIN
- KUNUNURRA
- MANDURAH
- MANJIMUP
- MERREDIN
- MOORA
- MORAWA
- NAREMBEEN
- NARROGIN
- NORTHAM
- PINGELLY
- PORT HEDLAND
- QUAIRADING
- WAGIN
- WYALKATCHEM

TASMANIA — Metropolitan & Country Dealers & Service Dealers

HOBART
Motors Pty. Ltd.,
179 Macquarie Street

BURNIE
Motors Pty. Ltd.,
84-89 Marine Terrace

DEVONPORT
Motors Pty. Ltd.,
628 Victoria Parade

KING ISLAND
King Island Motors Pty. Ltd.,
Netherby Road, Currie

LAUNCESTON
Motors Pty. Ltd.,
165 Brisbane Street

SMITHTON
Motors Pty. Ltd.,
16 Nelson Road

ULVERSTONE
Motors Pty. Ltd.,
99 Reibey Street

NORTHERN TERRITORY — Dealers

ALICE SPRINGS
Kittle Bros. (Alice Springs) Pty. Ltd.,
Cnr Wills Terrace & Railway Terrace

DARWIN
Suttons Motors (Darwin) Pty. Ltd.,
Cnr. Mitchell and Knuckey Streets

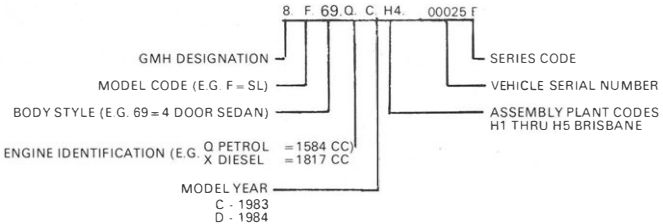
Section 5: Specifications

Serial Numbers

V.I.N. Plate (Vehicle Identification Number)

Attached to the top right hand side (driver's side) of the radiator support panel.

The table below gives a breakdown of the V.I.N. and the meaning of each section.


8 F 69 Q C H4 00025 F
GMH DESIGNATION
MODEL CODE (E.G. F = SL)
BODY STYLE (E.G. 69 = 4 DOOR SEDAN)
ENGINE IDENTIFICATION (E.G. Q PETROL =1584 CC, X DIESEL =1817 CC)
MODEL YEAR
C - 1983
D - 1984
SERIES CODE
VEHICLE SERIAL NUMBER
ASSEMBLY PLANT CODES
H1 THRU H5 BRISBANE

Vehicle Serial Number (Chassis Number)

Stamped on the front of the right hand side (driver's side) of the radiator support.

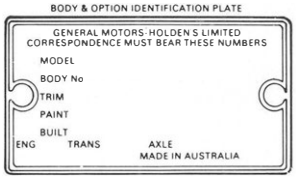
Body Option Identification Plate

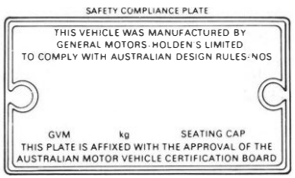
Attached to the lower part of the firewall at the passenger side of the engine compartment. The plate shows the body styles, body serial number, paint and trim colour combination, paint number, Engine, Transmission and Axle Ratio Options.

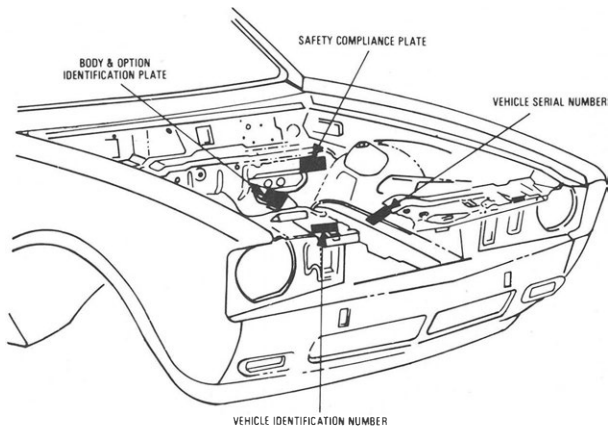
The Built date is defined as "The date of manufacture" by calendar month and year in which the body shell and power train sub-assemblies are conjoined and the vehicle is driven or moved from the production line.

Safety Compliance Plate

Attached to the firewall at the passenger side of the engine compartment, the plate shows the Vehicle Series, Model, Style, Month and Year of production, Vehicle Serial Number, approved seating capacity, and the Australian Design Rules with which the vehicle complies.







Engine Number and Suffix Code

PETROL

The engine number is stamped on the front right hand side (driver's side) upper surface of the cylinder block.

The suffix code for the Petrol Engine is "Q". This signifies Isuzu Petrol engine—8.3 to 1 Compression Ratio.

DIESEL

The engine number is stamped on the left hand (passenger) side transmission mounting flange of the engine block.

The suffix code for the Diesel Engine is "X" this signifies Isuzu Diesel engine—21.0 to 1 Compression Ratio.

PETROL Models

Model Identification (Petrol)

Model Range	Model Identification	V.I.N. Code Number
Gemini Sedan	8TE69	8E69
Gemini 'SL' Sedan	8TF69	8F69
Gemini 'SL/X' Sedan	8TV69	8V69
Gemini 'SL' Station Wagon	8TF15	8F15
Gemini Panel Van	8TE70	8E70

Engine Data (Petrol)

Engine Designation	1600
Piston Disp. Nom — Cu. Cms	1584
Comp. Ratio	8.3:1
Petrol Research Octane Rating	89
Number Cylinders	Four
Bore/Stroke mm	82.0 x 75.0
Taxable H.P. RAC or SAE	16.69
Kilowatts Gross @ R.P.M.	49 @ 5000
Torque Nm Gross @ R.P.M.	106 @ 3400
Cylinder Numbering (Front to Rear)	1 — 2 — 3 — 4
Firing Order	1 — 3 — 4 — 2

Capacities (Petrol)

Engine Oil	Litres
All Models — Service Refill	3.2
— Add for Filter	0.4
Manual Transmission	
4-Speed All Synchromesh	1.3
5-Speed All Synchromesh	1.6
Automatic Transmission	
Service Refill — approximate	3.0
Dry	5.5
Rear Axle	
All Models	1.4
Cooling system	
All Models	6.0
Pressure Rating of Radiator Cap	15 lbs/103 kPa
Fuel Tank	Litres
All Models	52
NOTE: Use fluid level for final check.	

Wheel Nut Torques

Recommended Wheel Nut Torque is 70-75 Nm.

Petrol Models

Clearances and Settings (Petrol)

Engine Type	1600
Distributor Point Opening Cam Angle Dwell	52°± 5°
Valve Clearance Inlet — Cold — Hot Exhaust — Cold — Hot	 .15 mm .20 mm .25 mm .30 mm
Spark Plug Gap	.7-.8 mm

Carburettor Mixture

The mixture control of the carburettor has been sealed and the idling speed set to comply with the Australian Design Rules. The reason for this is to conform to anti-pollution measures.

Your GMH Dealer has the full information concerning the foregoing.

Dimensions of ground clearance are for vehicle with standard equipment (i.e. options not included) and having the following loads.

Sedans—1 person in each front bucket seat and 2 people in rear seat. Each person weighing 68 kg.

Wagon—1 person in each front bucket seat and 2 people in rear seat (each person weighing 68 kg) and 45 kg evenly distributed over tonneau floor.

Panel Van—1 person in each front bucket seat. Each person weighing 68 kg and 280 kg evenly distributed over tonneau floor.

Petrol & Diesel Models

Vehicle Dimensions

Item	millimetres
Overall Length All Models	 4247
Overall Width All Models	 1570
Overall Height* Sedan SL Sedan SLX Sedan SL Station Wagon Panel Van	 1335 1333 1331 1343 1340
Wheelbase All Models	 2404
Track Front Rear	 1321 1325
Minimum Ground Clearance* Sedan SL Sedan SL/X Sedan SL Station Wagon Panel Van	 135 132 130 144 151

*At design load.

Diesel Models

Model Identification (Diesel)

Model Range	Model Identification	V.I.N. Code Number
Gemini Sedan SL/X	8TV69	8V69

Capacities (Diesel)

	Litres
Engine Oil All Models — Service Refill — Add for Filter	 4.7 0.8
Manual Transmission 5-Speed All Synchromesh	1.6
Rear Axle	1.0
Cooling system Pressure Rating of Radiator Cap	7.0 15 lbs/103 kPa
Fuel Tank	Litres 52
NOTE: Use fluid level for final check.	

Engine Data (Diesel)

Engine Designation	4FB1
Piston Disp. Nom—Cu. Cms	1817
Comp. Ratio	21.0:1
Number Cylinders	Four
Bore/Stroke mm	84.0 x 82.0
Taxable H.P. RAC or SAE	17.5
Kilowatts Gross @ R.P.M.	40 @ 5000
Torque Nm Gross @ R.P.M.	105 @ 2000
Cylinder Numbering (Front to Rear)	1—2—3—4
Firing Order	1—3—4—2

Clearances and Torques (Diesel)

Engine Type	4FB1
Valve Clearance Inlet — Cold Exhaust — Cold	 0.25 mm 0.35 mm
Inlet manifold mounting nuts torque:	4.0 kg-m (28ft-lbs)
Outlet manifold mounting nuts torque:	2.5 kg-m (17ft-lbs)
Cylinder head bolt torque:	13.5 kg-m (93ft-lbs)

Fuse System

Fuses

The fuse block is located behind a plastic cover t the lower right hand end of the instrument panel, below the hood release. To gain access to the fuses remove the cover by using the two tab grips on either side of the cover. The fuses can be identified by referring the fuse layout on the reverse side of the cover.

If, after replacing a burnt out fuse, the new fuse burns out, this indicates that the fuse is still overloaded. The cause of the fault should be located and rectified by a GMH Dealer.

Fusible Link

In order to reduce the possibility of a fire, whether due to electrical causes or an accident, the wiring harness is protected by the inclusion of a fusible link, located in the harness next to the battery. In case of a short circuit, the link can melt internally, disconnecting the battery by the fusing action. The encasing insulation has been specially designed to withstand the to contain the fused wires. Thus the fusible link provides a combined fuse and fire protection feature.

Device or Circuit Protected	Feed Control	Fuse Capacity
Windshield Washer Windshield Wiper Cigarette Lighter	ACC or ON on Ignition Switch	15 amps
Instrument Lights Auto. Trans. Console Light	ON on light switch	15 amps
Hazard Warning Lights Turn Signal Lights	Battery	15 amps
Brake Warning Light Back-up Lamps Gauges/Indicators	ON on Ignition Switch	10 amps
Licence Plate Lamp Tail Lamps and Parking Lamps	ON on Light Switch	15 amps
Stop Lamps Horns/Clock Interior Lamps	Battery	15 amps
Radio	ACC or On on Ignition Switch	15 amps
Heater/Defroster Air Conditioner (where fitted)	ON on Ignition Switch	15 amps
Headlamps Switch	Battery	15 amps
Headlamp High Beam	Battery	15 amps
Headlamp Low Beam	Battery	15 amps

Headlamp and Bulb Specifications

Headlamps	Part Number	Power Rating
2 Lamp System—Styled Lamps—SL, SLX Sedan & Wagons	94217817	60/55 watt
Rectangular Sealed Beam—Base Model Sedan & Van	94214882	65/55 watt
Bulbs	**Part Number**	**Power Rating**
Front Turn Signal	82194002	21 watt
Parking (Front)	82194004	5 watt
Tail (Sedan)	142450	5 watt
Stop (Sedan)	9417866	21 watt
Rear Turn Signal (Sedan)	,,	21 watt
Back-up (Sedan)	,,	21 watt
Front Repeater Lamps	82194006	5 watt
Passenger Compartment (Dome Lamp)	94024119	10 watt
Load Compartment Lamp (Van & Wagon)	11030669	10 watt
Licence Plate (Sedan)	11079451	5 watt
Headlamp High Beam Indicator		1.2 watt
Generator Charge Indicator		1.2 watt
Oil Pressure Indicator		1.2 watt
Brake Warning Indicator	VS14110	1.2 watt
Instrument Panel Illumination		1.2 watt
Turn Signal Indicators		1.2 watt
Auto. Trans. Floorshift Indicator	94021118	3.4 watt
Master Warning	9417561	2.6 watt
Low Fuel (Diesel)	,,	2.6 watt
Sedimentor Warning (Diesel)	,,	1.2 watt

N.B. Some of the bulbs listed are subject to model or option selection.

Bulb Replacement

Headlamps

This should be done by your GMH Dealer as the lights may need to be re-aimed.

Front Parking and Turn Signal Lamps

Unscrew the two screws and remove the lens.
Remove and replace bulb then replace lens.

Rear Stop/Tail, Turn Signal and Back-Up Lamps

You get to these through the luggage compartment (boot). Remove the bulb holders by twisting, and remove the bulb by turning it to the left.

Rear Number Plate Lamps

The bulbs can be changed by pulling the bulb out (from the outside) through the illumination aperture on the sedan.

Instrument Panel and Console Lamps

These should be replaced by your GMH Dealer.

Interior Dome Lamp

Gently prise off the lens with a small screwdriver, and pull the bulb straight out.

Section 6:
Appearance, Maintenance and Service

Paintwork

The paint on your Gemini is finished in acrylic lacquer and will stay bright and new-looking provided you wash it regularly, using approved products. Weekly washing is recommended if the vehicle is being used constantly or if it is not parked under cover.

Before you wash the paintwork, thoroughly wash in and around the front and rear windows and check that door drain holes, tailgate drain holes and rocker sill vents are clean. Hose off any heavy dirt on the glass, but leave final cleaning of the glass until last.

Washing tips

Use either cold or warm water — preferably running.

Use clean chamois cloths, sponges or rags (old, clean linen is better than new material for glass).

Don't wash your vehicle in bright sunlight — it will streak.

Grease and oil can be removed with a little kerosene or white spirits. Flush with water afterwards.

If petrol is spilled during refilling, flush with water immediately.

Be sure that your cleaner, polish or wax is suitable for acrylic finishes. AC Delco Wash & Wax from your GMH Dealer is highly recommended.

Insect spots can be removed with a mixture of 220 grams of baking soda in 2 litres of water. Flush clean afterwards. New tyre look can be restored with AC Delco Tyre Black from your GMH Dealer.

Tarnished chrome responds well to AC Delco Polishing Liquid.

CLEANING OF INTERIOR

Care and Cleaning of Upholstery

Dust and dirt particles which accumulate on the surface of the interior trim should be removed every few weeks — more often with constant hard driving. This can be done readily with a vacuum cleaner. Before attempting to remove spots and stains from an upholstery fabric, it is necessary to determine as accurately as possible:

1. The type of fabric.
2. The nature and age of the stain.
3. The effect of the stain removal agent upon the colour, structure and general appearance of the trim material.

It is essential that stains be removed from the trim material as soon as possible after they have been made. If they are allowed to remain on the fabric for any length of time they very often become oxidised or set, and removal becomes difficult, if not impossible.

Cleaning Carpets

The use of AC Delco Velour Fabric and Vinyl cleaner will assist in the above.

After cleaning, or better still before using the vehicle, apply AC Delco Fabric Guard to maintain a fresh clean appearance and to protect the upholstery from futher dirt.

Thoroughly brush or vacuum the carpet. In many instances the carpet may require no further cleaning. If the carpet is extremely soiled, thoroughly vacuum it to remove loose dirt; then using AC Delco Velour Fabric and Vinyl Cleaner, clean approximately one square foot at a time. After each area is cleaned, remove as much of the cleaner as possible with a vacuum cleaner. After cleaning the carpet, use an air hose to fluff the carpet pile, then dry the carpet. After the carpet is completely dried, use an air hose to again fluff the carpet pile

Cleaning P.V.C. Coated Fabrics

Vinyl (P.V.C.) coated fabrics are used for seating, headlining and auxiliary trimming. The grades used vary according to their function. P.V.C. fabrics are generally made with fabric bases upon which synthetic resins are applied. Care of P.V.C. fabrics is a relatively simple but important matter. The surface should be wiped over with a dry cloth during the regular cleaning of the vehicle. Should dirt accumulate and become embedded in the material pattern the following procedure is recommended.

1. Using luke warm water and soap, work up thick suds on a piece of cheesecloth, and apply to the surface. A soft bristle brush can be used to advantage to remove stubborn stains or dirt embedded in the grain of the material.
2. Repeat using only a damp cloth and no soap.
3. Wipe dry with a soft cloth.

The above cleaning instructions also apply to the rubber floor mats.

Cleaning Seat Belts

Cleaning of the seat belts can be carried out by using a mild non-abrasive soap and lukewarm water. After washing be sure to thoroughly sponge the washing solution out of the belts.

CAUTION: Do not bleach or dye belts since this may severely weaken them.

Cleaning Cloth Trim Material

Where the seats in your vehicle are upholstered with cloth, the following instructions should be observed. Most loose dirt and dust can be removed by a vacuum cleaner or a soft brush. Do Not Use a whisk broom or a coarse hair brush. If normal soiling should take place, it is recommended that the fabric be sponged lightly with warm water containing a detergent and a small amount of ammonia. The fabric should then be rubbed lightly, and if necessary, sponged again to remove anything stubborn. Soak up excess fluid with dry cloth. GM Upholstery Cleaner may be used to advantage, but should be used sparingly.

Cleaning Ash Trays

Insert Type

Pull the ash tray straight out and the tilt downwards to remove. The tray can then be emptied and cleaned. To replace, reverse the procedure.

Tilt-Open Type

To remove, open ash tray, depress the spring loading tab in centre and carefully withdraw. The tray can then be emptied and cleaned. To replace, reverse the procedure.

Cleaning Glass

Glass

The interior glass area of the vehicle should be cleaned using AC Delco Glass Cleaner with a clean soft cloth. Care must be taken when cleaning inside the rear windscreen so as not to damage the heating element.

CAUTION: Many cleaners may be toxic or flammable, or may cause damage to the interior. When cleaning the interior, do not use volatile cleaning solvents such as: acetone, lacquer thinners, enamel reducers, nail polish removers; or such cleaning materials as laundry soaps, bleaches or reducing agents. Never use carbon tetracholride, gasoline or naphtha for any cleaning purpose.

IMPORTANT: Be sure the vehicle is well ventilated while using any cleaning agents. Follow the manufacturer's recommendations when using such products.

CLEANING OF EXTERIOR

Preliminary Steps

CAUTION: Care should be used when moving the vehicle after washing, in case water has affected the brakes.

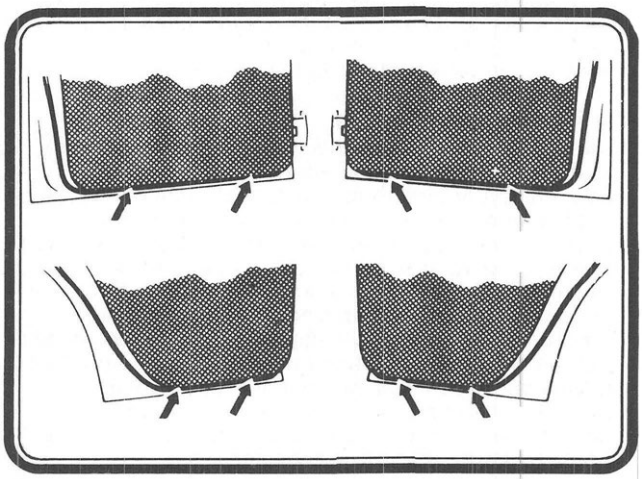
Frequent hosing and washing of the vehicle cannot be overstressed as the most effective precaution against corrosion. Other items requiring attention before washing the vehicle are as follows:—

1. Underbody Cleaning

The effects of salts and other corrosive materials from road surfaces can result in accelerated rusting and deterioration of underbody components such as brake and fuel lines, frame, underbody floor pan, exhaust system, brackets, parking brake cables. These corrosive effects, however, can be reduced by periodic hosing of the underbody with plain water whenever the vehicle is being washed. In geographic areas having a heavy concentration of corrosive materials it is recommended that the complete underbody be inspected and washed at least once each year, preferably after a winter's exposure. Particular attention should be given to cleaning out underbody members where dirt and other foreign materials may have collected.

2. Door Drain Holes

It is important that the drain holes at the bottom the door panels are checked to make sure that they are free of dirt and foreign matter, which could trap water inside the panels. Clogged drain holes can be cleaned with a small screwdriver and these drain holes are angled back towards the rear of the vehicle. (Refer illustration below.)



3. Rocker Sill Vents

In all models there are vents which should be regularly checked to see that they are clear of blockage, using a blunt ended instrument. These vents are formed as cut-outs in the sheet metal along the bottom edge of the rocker sill, being evenly placed between the front and rear wheel arches and face inward, towards the centre of the vehicle.

Glass

Special care should be taken to avoid scratching the glass when it is being cleaned. If it is cleaned at the same time as the rest of the vehicle, there is a possibility that particles of grit will cause fine scratches. An accumulation of these on the windshield can make night driving very unpleasant. Flush off any heavy mud deposits on the glass when washing the body, but leave the final cleaning and polishing until afterwards. Use AC Delco Glass Cleaner and wash each section of glass in turn, making sure that the water, its container and the sponge are quite clean and free from grit. Clean old linen cloth is better than new material for polishing glass.

By adding AC Delco Optikleen to the windscreen washer reservoir you will help the wipers to keep the windscreen sparkling clean.

Insect Spots

Insect spots on the paint finished parts of the vehicle can be easily washed off by using a solution containing 2 litres of water in which approx. 220 grams of baking soda (Bıcarbonate of Soda) has been dissolved. Flush the washed parts with clean water. After washing and drying, park the vehicle in a shaded area.

Washing

The acrylic lacquer finish on your vehicle is superior to ordinary lacquers and will stay bright and new looking for years with little or no polishing, provided it is given a reasonable amount of regular washing to keep off road grime.

To preserve the original paint finish of the vehicle, it is essential that it is kept clean by frequent washing. Washing not only removes dirt and road grime that settles on the vehicle, but also dilutes acids which accompany such grime, in particular, salt from air or sea spray encountered in coastal areas which often become trapped in crevices. Tree sap, road tar, excretion from insects and industrial fall out often contain harmful chemicals and other foreign matter that may permanently damage the paint finish of the vehicle. these should be removed without delay, using an effective removal agent.

Regular Washing

If the vehicle is in continuous use, it should be washed at least once a week with either cold or warm water (preferably running water), using clean chamois leathers, sponges or rags free from dirt or grit likely to scratch the paint finish. It is good practice to first hose the vehicle to remove as much of the grit and grime as possible before swabbing the surface. Do not wash the vehicle under bright sunlight when high temperatures are being experienced, as this will resullt in a streaky, watermarked finish.

AC Delco Wash and Wax loosens road grime to make washing easier and leaves paint shining clean.

NOTES:

1. Calcium chloride and other salts, road oil and tar, tree sap, chemicals from factory chimneys and other foreign matter may damage any known automobile finish if allowed to remain in contact with the paint film.
2. Some chemical cleaners used for removing road oils and tars from painted surfaces have been found to be detrimental to acrylic finishes. When purchasing a cleaner, polish or wax, ensure that it can be safely used on an acrylic finish.
3. Grease and oil, and even tar if it's fresh, can be removed from the finish with a little Kerosene or White Spirits. As a precaution against staining, wash and polish as soon as possible the area from which the foreign matter has been removed.

IMPORTANT: If petrol is spilt on the paint finish when refilling, owners are advised to ensure that it is flushed off with clean water immediately. The reason is that petrols currently in use have a tendency to stain or soften new paint finish during the weathering out period, particularly when the vehicle is exposed to high temperatures.

Paint Work Inspection

Regular inspection of the vehicle should be made for scratch marks, cracks or damaged areas, all of which could develop rust and thus affect paint finish. Any deep scratches, cracks or breakdown in the finish should be repaired without delay. Care should be taken to ensure that any rusting is counteracted immediately, otherwise rust "creep" will extend beyond the damaged area. This applies particularly in sub-tropical areas or coastal districts, where the moist or salt-laden atmosphere accelerates rusting if it is allowed to develop through neglect. The paint finish of the vehicle gives a very high degree of protection against the weather, but it should be realised that wear and deterioration occur when the vehicle is exposed to elements for prolonged periods. The vehicle therefore should be garaged whenever possible.

Chromium Plated Parts

Generally, a rub with a clean soft cloth will be all that is necessary to remove dust from the chromium plated parts. However, if the chromium is covered with dead insects or mud, it should be washed with warm soapy water and then cleaning with AC Delco Polishing Liquid.This polish should also be used if the chromium shows signs of tarnishing. Do not use ordinary metal polishes as they may contain abrasives which would ruin the plating.

Polishing

Even though the acrylic lacquer finish on your vehicle is more durable than ordinary lacquers, under certain conditions you may wish to polish your vehicle to provide maximum protection against road dirt and industrial fall out etc. Also, the application of a polish may be required to remove foreign matter which is not normally removed from vehicles by washing. Over a period of time, such foreign matter may build up on the paint surface to the detriment of its overall appearance.

Do not attempt to apply a polish without first washing to remove existing loose grit, surface dirt, dust or grease, etc.

Either AC Delco Liquid Silicon Polish or AC Delco Polishing Cream will quickly and easily impart a deep, rich shine when used as directed on the container.

Tyres

Sponging with cold water is all that is necessary for normal cleaning of the tyres. Oil and grease can, and should, be removed with soap and water or detergent. For tar or other substances, a mild abrasive, such as mechanics' hand soap or kitchen cleaning powder, may be used if necessary. thoroughly wash the tyres with water to finish. Petrol must not be used for cleaning tyres.

New Tyre look can be restored by using AC Delco Tyre Black.

Mag wheels should be cleaned by using AC Delco Mag Wheel Cleaner to maintain a bright sparkling appearance.

To protect and preserve your dashboard, steering wheel, vinyl upholstery, tyres and protection strips use AC Delco Vinyl and Rubber Conditioner.

AC Delco Degreaser will help to keep your engine clean.

GM Replacement Parts and Accessories

GM Parts & Accessories Division of General Motors-Holden's Ltd. is established to distribute GM Parts through Authorized GMH Dealers located throughout the Commonwealth.

GM Parts are manufactured to the high standards of quality established for General Motors-Holden's vehicles—to the correct specifications and of the same materials as the original parts on your vehicle. They are, therefore, warranted, and it is definitely in your interest to specify them,

Engine Oil

CAUTION: If you have any doubts about your own ability, please have the job done by your GMH Dealer.

Initial Oil Fill

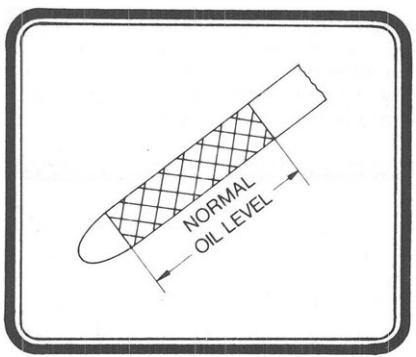
At the factory, your vehicle was filled with high quality oil. This should be changed at the first service and then changed at every 6 months or 10,000 km service for petrol and at 3 months or 5,000 km for Diesel engines. These intervals are for "normal" operating conditions.

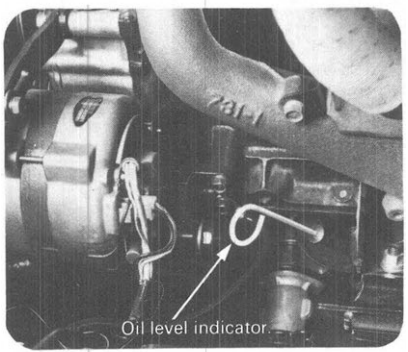
Checking the oil level

The engine oil level should be somewhere on the check-patterned section of the indicator, not under, or over.

To check the oil level accurately, the vehicle must be parked on level ground and the engine stopped for at least ten minutes. This gives the oil which has been circulating, time to drain back into the oil pan.

Remove the indicator, wipe it clean with clean cloth or paper before reinserting it firmly. Pause for a second then withdraw the indicator to check the reading of the oil level. Add oil as required.





Oil consumption

It is normal for your engine to use up oil between oil changes. It uses oil as a lubricant and as a coolant. Oil consumption will be higher than normal during the running-in period, and a car used for city driving will use oil if driven for some distance on a highway — especially if it's a warm day.

High speeds also use up oil.

If none of these factors applies to your car, and you feel it is using too much oil, see your GMH Dealer about it.

Oil Filter Replacement

The oil filter should be replaced every six months or 10,000 kilometres — whichever comes first. After this replacement, add an extra 0.4 litre of oil.

If you drive under dusty conditions more frequent replacements may be necessary.

Always use AC Filters, for replacement purposes.

Oil Change Intervals

The amount of time between changes depends a lot on what you use the vehicle for, and where it is driven.

The table indicates oil change intervals for cars used "normally".

If you usually drive on dusty roads; if you often take long trips; or — strangely enough — if you only use your car for to and from the office or the shops, you will need to change the oil more often. Say every month or every 5,000 kilometres.

NORMAL OPERATING CONDITIONS

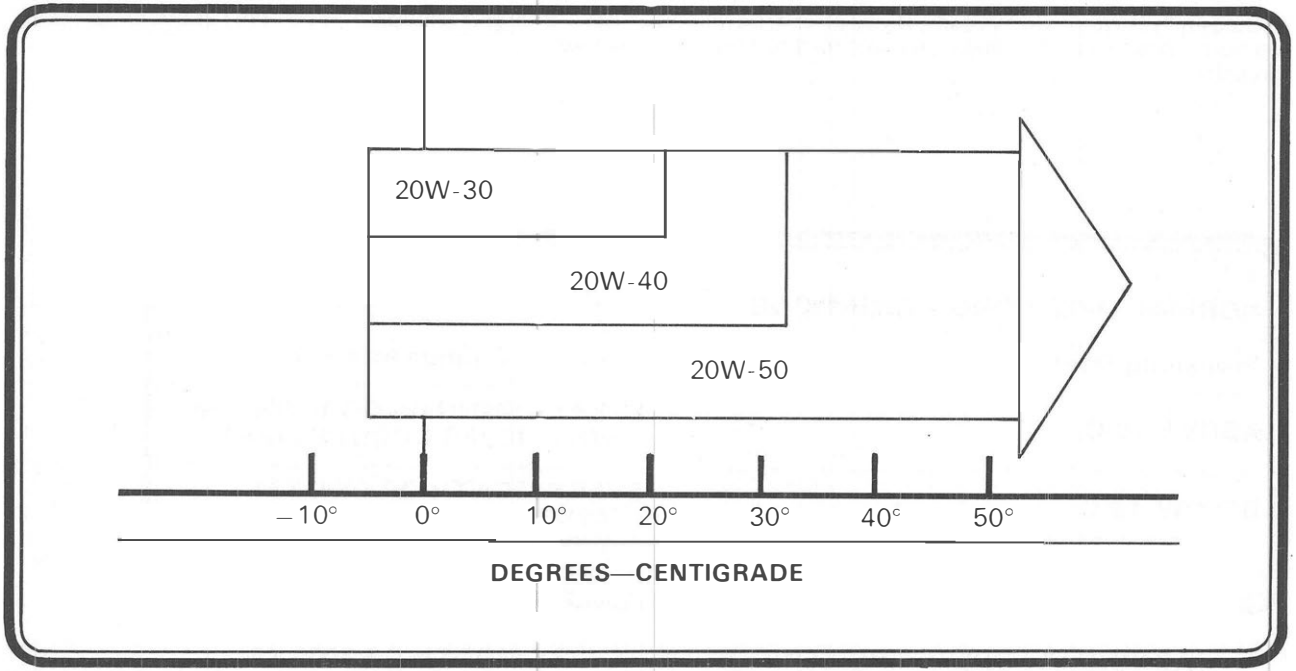
Prevailing Daytime Temperatures	Regular Oil Change Interval
ABOVE 10°C	EVERY 6 MONTHS OR 10,000 KM —WHICHEVER OCCURS FIRST
BELOW 10°C	EVERY MONTH OR 5000 KM —WHICHEVER OCCURS FIRST

ABNORMAL OPERATING CONDITIONS—EVERY MONTH OR 5000 KM

Engine Oil Grades—Petrol

The grade of crankcase oil should be selected to give the best performance for the climatic and driving conditions under which the vehicle is driven. When the crankcase is drained and refilled, the oil should be selected for the temperature range anticipated for the period during which the oil will be used.

During hot weather, an oil which will provide adequate lubrication under high operating temperatures is required and in the cold one which will permit easy starting at the lowest temperature likely to be encountered.



NOTE: Non-detergent and other low quality oils are specifically not recommended. The use of break-in oils, tune-up compounds, friction-reducing compounds and other supplemental additives are not recommended; their use will increase operating costs.

REMINDER: The use of proper engine oils and observing oil change intervals are your best assurance of continued reliability and performance from the engine of your vehicle.

In the event of an operational problem, consult your GMH Dealer for advice before using supplemental additives.

Engine Oil — Diesel

Use only the recommended engine oils.

Change the Engine oil after the first 1,500 km and then each 5,000 km under normal operating conditions.

If you operate the vehicle under extreme conditions, as shown on page 114 of this owner hand book, the oil must be changed more frequently.

Recommended Diesel Engine Oils

CC grade

BP Energol HD Oil
BP Vanellus M
BP Super Visco Static
BP Visco 2000
BP Vanellus M Multigrade
Castrol or Deusol CRB
Caltex Five Star Motor Oil
Caltex RPM Delo 200 Oil
Caltex RPM Delo 100 Oil
Essolube HDX
Mobil Delvac 1100 Series
Mobil Heavy Duty
Mobil Special
Mobil Delvac Special
Shell Rimula X
Shell Rotella TX
Shell Super SF 20W/40
Shell XMO
Sunoco Sunlube Motor Oil
Sunoco Dynalube Motor Oil
Sunfleet Mil-B
Total GTS
Total Rubia H

Transmission Oils

Manual Transmission

Check the oil level every six months or 10,000 kilometres whichever comes first — and add oil to the level of the plug hole if necessary.

The oil should be changed at the six months or 10,000 service, then every two years or 40,000 kilometres.

Automatic Transmission

Use only DEXRON ® products. These are available from your GMH Dealer.

To check the fluid level:

First drive the vehicle for several kilometres making frequent stops and starts. (A shopping trip would be ideal.)

Now pull up, put the vehicle in PARK and leave the engine running while you check the dip stick. This is found under the bonnet near the drivers side rear of the engine compartment.

If the level is at or below the ADD mark, add fluid until the stick reads FULL — it will take about ·5 litre. Don't overfill.

Transmission fluid must be changed every two years or 40,000 km.

More often if you drive in the city in summer or use it to pull a caravan, or if you often leave it idling.

Rear Axle Oil

This should be checked every six months or 10,000 km whichever comes first. If necessary, add oil to bring the level of the oil to the plug hole. Raise the rear axle of the vehicle 280 mm to check the level.

Cooling System

This must be serviced regularly if the engine is to operate efficiently.

Rust Protection

High purity water should be used with a GMH approved anti-rust fluid. If you live in an area where water has a high level of mineral or chemical content, use rainwater or distilled water.

If you need to use borewater in an emergency — change it for clean water as soon as possible.

Follow the directions on the pack when adding anti-rust fluid.

Radiator Pressure Cap

Because of this cap your engine can work at over 100°C without boiling.

If your engine should overheat, refer to instructions on page 59.

Checking Coolant Level

The coolant level should be checked at least weekly when the engine is cold. Add coolant to bring the level up to within 1 to 2 cm below the bottom of the filler neck.

Coolant Replacement

Every 12 months or 20,000 km the cooling system should be drained, flushed with clean water and refilled with new coolant using the following procedure:

To drain the radiator—remove the cap, and disconnect the lower radiator hose from the radiator.

To drain the engine—unscrew the drain plug located on the passenger side of the engine block just near the engine mounting bracket.

To flush the system—reconnect the hose and drain plug before refilling with clean water. Run the engine for a short time to circulate the water then drain the system again.

Reconnect hoses and tighten drain plug before refilling system with premixed coolant comprising clean water and corrosion inhibitor to GM HN1109 specification. Add 200 ml inhibitor for a complete refill.

CAUTION: Corrosion inhibitors and anti-freeze fluids are poisonous. Use extreme care when handling these materials, particularly when draining coolant. If swallowed seek medical attention.

Anti-freeze Fluid

Where a vehicle is to be parked overnight or operated for any length of time in regions where temperatures of 0°C or below are encounted (e.g.—snow areas), the recommended brand of anit-freeze fluid should be used in the cooling system in accordance with the instructions specified.

The recommended anti-freeze fluid is permanent type (ethylene glycol) to GM 1899M specification. Before adding, make a thorough check of the cooling system.

Do not mix different types of anti-freeze as they may be incompatible. If a different type has been used in the radiator; flush and refill with coolant before adding the recommended anti-freeze.

CAUTION: Draining of the main radiator and cylinder case assembly will not drain the water out of the heater radiator; therefore, the use of Anti-Freeze will eliminate the risk of a damaged heater core.

Battery (12 volt)

The battery is located in a metal cradle mounted on the left hand fender skirt in the engine compartment and the negative (—) terminal is "grounded". Never disconnect the battery or generator when the engine is running. Always connect Positive (+) to Positive (+), Negative (—) to Negative (—) whenever a battery charger is used.

The battery is a low maintenance type which uses very little water. It should not need to be topped up at less than 10,000 km intervals. In normal service check the level at 10,000 km, or 1 month intervals. At high temperatures, or if driving long distances at high speeds, check the level more frequently.

The maximum level is when the acid is JUST TOUCHING the bottom of the vent tube. Add water only if the acid is more than 5 mm below the vent tube. USE DISTILLED WATER ONLY. ADD SLOWLY, DO NOT OVERFILL, particularly when the battery temperature is less than 20°C, as subsequent operation at high temperatures over long distances may then cause loss of acid.

Wash your battery regularly with a mixture of water and either ammonia or baking soda. Rinse with clean water, dry, and rub a little vaseline round the battery posts and cable terminals. This will prevent corrosion. Do not hammer or otherwise drive a terminal onto its post.

Maintenance-Free Battery (where fitted)

This type of battery incorporates the very latest in battery technology. Consequently, it does not require periodic maintenance except to ensure that the terminals are clean and tight. Its top is permanently sealed (except for some small vent holes) and has no filler caps. You will never have to add water.

Brake Master Cylinder

Fluid level should be checked regularly and should remain between the MIN-MAX levels on the top part of the reservoir wall.

If the master cylinder needs constant topping up you could have a problem and should tell your GMH Dealer.

Air Cleaner Element

This should be replaced every 2 years or 40,000 km. More frequently if you drive in dusty conditions.

CAUTION: Do not run the engine with the air cleaner removed. When the air cleaner is removed backfiring can cause fire in the engine compartment if the engine is started.

Evaporative Control System

Check all fuel and vapour lines every two years or 40,000 km. Replace them if necessary.

WIPER WASHER

Wiper Blades — Cleaning

Much of the oil road scum thrown up onto the windshield glass, causing smearing when the wiper is switched on, transfers onto the wiper blade. Many owners, whilst they methodically clean the windshield glass, omit to clean the wiper blades and consequently smearing of the glass reappears immediately the wiper blades are set in motion. The blades can be cleaned by simply lifting them off the windshield glass and then using warm water and a recognised washing fluid. If so desired, the wiper blade can be removed from the arm for cleaning purposes by simply disengaging it from the arm in accordance with the following instructions:—

1. Lift up tab at the end of the arm and remove blade sideways.
2. To replace, slide the blade pin into the hole in the arm clip, noting an audible click.

Washer Reservoir

A plastic reservoir containing liquid for the windshield washer is mounted in the engine compartment. It is suggested that when checking the radiator coolant level, the washer reservoir be checked also. For a crystal clear view Optikleen Washer Solvent (Part Number M37933) can be used by adding from the graduated container, the recommended proportion.

CAUTION: Do not operate the wiper blades by hand as this may damage the wiper drive mechanism.

In dry conditions, if the wiper blades are used to clean dust and dirt from the windshield always use the washer system to wet the windshield. Ensure that the windshield washer reservoir is checked regularly all the year round.

Should the wiper blades be frozen to the windshield, it is imperative that they be lifted off and freed by hand before switching on the windshield wiper system.

Lubricants and Filters

CHASSIS

ENGINE OIL

(Refer pages 102 and 103 for grades and application.)

MANUAL TRANSMISSION OIL

SAE 40. SE quality engine oil to NH 1419

AUTOMATIC TRANSMISSION FLUID

* DEXRON automatic transmission fluid only, identified also by Part No. 9985286 should be used for topping up or service refills.
* DEXRON is a registered trademark of General Motors.

REAR AXLE OIL

Use Multipurpose Hypoid gear oil in this order of preference, HN 1386 or HN 1187 or HN 1181 specification.

FRONT WHEEL BEARINGS

Grease to HN 1228 specification.

BRAKE FLUID

Fluid to HN1796 specification.

CONTROL SYSTEMS

Brake and Clutch Pedal Pivots, Clutch Linkage, Transmission Control Linkage, Accelerator Pivots, Parking Brake System, Pivot and Guides. Grease to HN 1225 (LG-2) specification.

BODY

Normal use of a vehicle causes metal-to-metal movement at certain points in the body. Noise, excessive wear and improper operation at these points will result when a protective film of lubricant is not

Servicing and lubrication should be an integral part of the lubrication service and should be checked out as required every 6 months or 10,000 kilometres.

POWDERED GRAPHITE

(Apply through key aperture)

Door Lock Cylinder
Instrument Panel Compartment Lock Cylinder
Rear Compartment Lid Lock Cylinder

NON-STAINING GREASE OR ZINC OXIDE GREASE

(Use sparingly on parts likely to be contacted by clothing)

Engine Hood Catch and Lock
Rear Compartment Hinges
Engine Hood and Door Hinges

SOLIDOIL

(Use sparingly on working surfaces)

Door Lock Fork
Door Lock Striker Bolt

IMPORTANT: Remove all lubricants that may have dropped or spread onto the external paint finish.

Tyres

Inside the lid of your glove box you will find a chart showing correct tyre inflation pressures for your vehicle under different operating conditions.

Always check tyre pressure when the tyres are cold, and always use a tyre pressure gauge. Your eye can deceive.

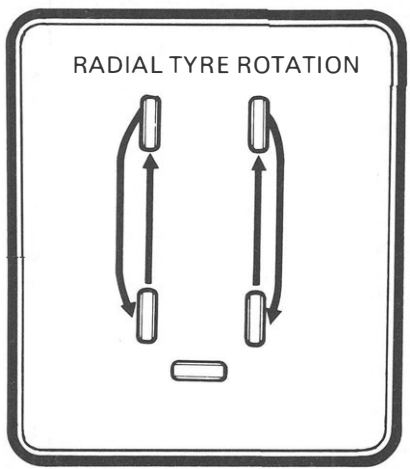
Tyre Pressure Recommendations

1. Tyre pressures should be checked when the tyres are cold (when the vehicle has been standing for 3 hours or more, or driven less than 2 kilometres).
2. Tyre inflation pressure may increase as much as 30 kPa (4 psi) when hot, (after the vehicle has been driven 15 kilometres or at speeds of more than 95 km/h. DO NOT reduce pressures to compensate for this build up. As a guide for checking warm/hot tyres under all conditions, allow pressure to read 10% above that recommended.
3. To maximise the protection of tyres on vehicles operating for prolonged times over rough roads i.e. particularly in outback conditions, it is recommended that a cold tyre inflation pressure of 275 kPa (39 psi) is used.
4. Do not forget the spare tyre: It is advisable to maintain the spare at the **maximum recommended tyre inflation pressure** listed on the placard.

Tyre Rotation

Front tyres are more prone to wear on the shoulder while rear tyres wear more on the crown. Wear can be evened out by rotating the tyres.

Check them at the 5,000 km inspection, then at intervals of 10,000 km. Your GMH dealer will be able to diagnose any unusual signs of wear and can also balance the wheels and tyres for you.



Tyre Replacement

Use only tyres recommended on the chart inside the glove box.

Don't mix cross ply and radial ply tyres on your vehicle and don't mix radial ply tyres with other types of tyres. New tyres should be fitted in pairs to the front but if replacing only one tyre, pair it with the least worn of the old tyres.

And if you replace all tyres with tyres of a different size, your speedometer readings may be affected. Have the car checked afterwards.

Tyres with a higher speed rating and/or with a maximum load rating in excess of that listed on the tyre placard for tyre size listed are also acceptable as replacements provided they are fitted to a suitable rim size.

Uneven or abnormal tyre wear is usually the result of incorrect inflation pressure, improper wheel alignment, wheels being out of balance, or poor driving habits. The original equipment tyres incorporate built-in tread wear bars which act as indicators to assist in determining when the tyres have worn to the point of needing immediate replacement.

When the wear bars appear, tyre replacement should not be delayed, in the interests of safety.

Radial Ply Tyres

Radial Ply Tyres have 'Radial' marked on them Because of the stiffening belt under the tread the ride characteristics of Radial Ply Tyres may be somewhat different from that of conventional tyres.

The appearance of a radial tyre when properly inflated gives the impression of being underinflated.

Tyres used at maximum speeds must be in good condition and not retreaded or regrooved. Refer to the chart inside your glove box for appropriate tyre pressures.

Heavy Treads

Take care with these. They should be used strictly as advised by the manufacturer.

See your GMH Dealer if you have any doubts.

Tyre Size Designation	Maximum Load Rating Lbs/Kgs*	
Listed	Listed	Others Acceptable
YR78S13 4P/R	900/410	Greater than 900/410
ZR78S13 6P/R	1040/475	Greater than 1040/475
ZR70S13 6P/R	1040/475	Greater than 1040/475

*Shown on the tyre.

Service and Maintenance

Owner's Responsibility

Normal maintenance services, as listed in this servicing schedule contained on pages 117 and 118 in this Handbook, and replacement of service items, are the responsibility of the Owner and as such are NOT considered, under the provisions of the New Vehicle Warranty, to be rectification of defects in material and workmanship.

Items such as wheel alignment, brake adjustment as a result of lining wear, etc., which may require servicing due to fair wear and tear, will be carried out at the owner's cost.

We strongly recommend that you read the Warranty Certificate at the front of this handbook so that you are conversant with your entitlements.

Water and atmospheric conditions, varying road surfaces, individual driving habits and vehicle usage, greatly contribute to the need for constant maintenance services to promote efficient vehicle operation. (Refer page 114.)

Owner Responsibility for Maintenance

The following items should be checked weekly between services:

- Battery Fluid level (where applicable)
- Engine Oil level
- Cooling system level (radiator)
- Brake master cylinder fluid level
- Windshield washer reservoir level
- Battery terminals (for corrosion)
- Tyre pressures
- Condition of tyres
- Fan Belt

It is your responsibility to have your car serviced regularly and to ensure that your GMH Dealer has attended to all points listed for that particular service. Not to do so may affect your warranty.

GMH Dealer's Responsibility

Your Service Dealer must attend to all items listed for any particular service and must see that the validation coupon is signed.

Service coupons are in this book in the following section. This section contains notes and instructions for your use.

CAUTION: If you have any doubts about your own ability, please have the job done by your GMH Dealer.

Operating Conditions

Normal Conditions

The maintenance instructions contained in this publication are based on the assumption that the vehicle will be used as designed and is operated in accordance with the instruction provided in the owner manual.

Extreme Conditions

Extreme operating can be described as that where a vehicle operates continually for a period of 1 month or 1500 kilometres under the following conditions:

Condition

1 Dust. dirt, loose road metal.
2 Muddy and wet areas.
3 Cold weather — below 10°C.
4 Stop-start, as experienced in inner city driving.
5 Caravan or Trailer hauling.

In such circumstances it is suggested that the following items be serviced more frequently than at the periods recommended in the Maintenance Schedule Plan.

Conditions	Items
1-3-4	Engine oil.
1	Engine oil filter.
1 — 2	Front suspension, steering, and parking brake system.
5	Automatic transmis-sion fluid
1	Engine air cleaner element.
1	Brake Servo air filter.
2	Front wheel bearings.
2	Manual transmission, drive line joints and rear axle.

If at any time it is considered that the above items or other items should be more frequently serviced due to the type of operation or before a long trip, discuss the situation with the service manager of your GMH Dealer.

Maintenance Plan

The 3-Step Service Concept

The fundamental points are:

1. A basic service interval period of 6 months or 10,000 kilometres whichever occurs first.
2. A "step" principle of 3 correlated services.
3. The frequency of these services is:

   "A" service items — Serviced every 6 months or 10,000 km
   "B" service items — Serviced every 12 months or 20,000 km
   "C" service items — Serviced every 24 months or 40,000 km

Service Designation	—A—	—B—	—C—
Items	Group I	Groups I & II	Groups I, II & III

Up to the 3rd step the items programmed in the earlier steps are included.

The total time/distance range of this Maintenance Schedule is 66 months or 110,000 kilometres.

Total Programme

Pre-Delivery Service

1 Month — 1500 Kilometres Inspection and Adjustment

Then as required:
(Months—km) whichever occurs first.

A @ 6 months—10,000 km
B @ 12 months—20,000 km
A @ 18 months—30,000 km
C @ 24 months—40,000 km
A @ 30 months—50,000 km
B @ 36 months—60,000 km
A @ 42 months—70,000 km
C @ 48 months—80,000 km
A @ 54 months—90,000 km
B @ 60 months—100,000 km
A @ 66 months—110,000 km

IMPORTANT
DIESEL ENGINES
It is the owner's responsibility to have the engine oil changed at 3 months/5000 km intervals under normal operating conditions.

Maintenance Servicing

Once the first service has been completed, dependability and performance are influenced by the degree of maintenance the vehicle receives.

Safety, economy and dependability cannot be assured unless regular maintenance is performed, preferably by factory-trained technicians. It is preferable to receive these services from the Dealer from whom the vehicle was purchased. However, Maintenance will be attended to by any Authorised GMH Dealer on presentation of the Owner Handbook, no matter where you may be situated.

What The Owner Should Do

When service, according to the time or distance interval, is due, the owner should present this Owner Handbook to a GMH Dealer as an authority to have the items listed attended to. After this work is completed, the owner should see that the Validation Record is stamped and signed by the dealer. The Handbook with the Validations completed is evidence that a vehicle has been adequately maintained. This is important as it will not only assist in the determination of Warranty Claims, but enhance the value of the vehicle whenever resale is contemplated.

What The Servicing Dealer Has To Do

Attend to all items listed for the particular service. When this has been done, it is most important that the Owner Handbook Validation be signed by the dealer or his representative.

All operations listed on the Service Coupons should be carried out following the procedures set out in the appropriate service manual.

The one month—1500 kilometre service will be performed without cost for labour by the Selling Dealer.

This service may be carried out by another GMH Dealer provided you have a letter of Introduction from the Selling Dealer. Your Dealer will supply the necessary letter of Introduction upon request.

Maintenance Plan

Group I Under Hood Operations
Change engine oil.
Check all fluid levels accessible in engine compartment, e.g brake, coolant, washer, battery electrolyte, auto transmission.
Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.*
Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
Wipe inside of distributor cap.
Inspect engine air cleaner element for restriction and condition Replace if necessary after testing.*
Check operation and setting of idle stop solenoid.
Check operation of bimetal control valve in hot idle compensator system.
Check automatic choke for free operation.
Check accelerator controls for interference, binding or damage.
Fist "A" Service Only.* Check torque of carburettor mounting bolts. Check operation of FGR valve, where fitted.
Clean radiator core — check for blockages.
Pressure test cooling system.
Air Conditioning Only.* First "A" Service Only. Repeat pre-delivery check as outlined in the HQ Service Manual, Air Conditioning Section, Page 33.
All "A" Services after the first. Check sight glass for sufficient R-12 charge
Group I Under Vehicle Operations
Change engine oil filter.
Manual Transmission Only. Check oil level.
Check rear axle oil level.
Inspect front suspension and steering joints. Check joint seals and covers for damage.
Lubricate accelerator, transmission shift and clutch linkages as applicable.
Check parking brake operation and lubricate system. Adjust if necessary.*
Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
Inspect engine and transmission mountings.
Check torque of rear suspension link attaching bolts.
Check torque of propeller shaft flange bolts.
Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required.* Check inflation pressures and torque wheel nuts.
Disc Brakes — Inspect pads for wear.
Group I Interior Vehicle Operations
Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.*
Station Wagon.* Check rear seat movement and lock operation.
Group I Exterior Vehicle Operations
Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
Check door drain holes and rocker sill vents for blockage using a blunt probe.
Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

Maintenance Plan

Group II Under Hood Operations
Lubricate distributor. Check condition of cap and rotor. Check TVRS cables for resistance. Replace spark plugs and distributor points.
EGR System Only.* Clean valve and manifold opening.
Check and adjust if necessary auto choke settings.
Check and adjust if necessary engine idle speed.
Check and adjust if necessary fast idle speed on choke cam.
Check torque of manifold mounting bolts, cylinder head bolts and rocker shaft nuts. Check valve lash.
Manual Transmission. Check clutch outer cable (upper) setting for operating clearance. Adjust if necessary.
Air Conditioning Only.* Inspect condenser to ensure that it is not plugged with leaves or other foreign material. Check evaporator drain tube for dirt and other restrictions. Inspect flexible hose lines for leaks and brittleness.
Drain and refill cooling system and recharge with inhibitor. Pressure test system.
Group II Under Vehicle Operations
Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
Inspect front wheel bearings and check adjustment. Repack only if necessary.*
Lubricate brake and clutch pedal springs, clutch bushing and clevis pin, as applicable.

Group III Under Hood Operations
Replace air cleaner element if not yet changed in previous 24/20 period.
Evaporative control system. Check all fuel and vapour lines and hoses for proper connections and correct routing as well as condition. Replace damaged or deteriorated parts as necessary. Ensure control valve is clear and operative.
Group III Under Vehicle Operations
Repack front wheel bearings.
Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.*
Auto Transmission Only.* Drain and refill fluid, adjust band and clean filter.
Manual Transmission Only. Change Oil.

*Additional Service—refer page 145.

N.B. It should be understood that whenever a B or C service is being carried out, some items on an earlier operation, may be superseded or modified by a later operation.

New Vehicle Preparation Validation

Your new vehicle has been inspected and prepared for delivery by your Dealer, in accordance with the manufacturer's New Vehicle Pre-Delivery Procedures.

Service Manager's Signature.....

Date.....P.T.O

Pre-Delivery Operations

Check, and adjust if necessary, the following items:

Under Hood Operations

	Oil levels of engine, auto trans, brake master cylinders, and Battery Electrolyte level.
	Hose connections, fill radiator and windshield washer reservoir. Ensure corrosion inhibitor is present in radiator.
	Air filter element and/or oil level in oil bath cleaners and breathers.
	Engine idle speed. (Petrol only).
	Air Conditioning as outlined in the HQ Service Manual, Air Conditioning Section, Page 33.

Under Vehicle Operations

	Oil, fuel, water and exhaust leaks.
	Lubrication and operation of steering gear from lock to lock, if excessive free travel evident, adjust steering.
	Oil levels in transmission and rear axle.
	Brake line connections — check hoses for correct clearance.
	Brakes — foot and park.
	Inspect tyres and inflate to recommended pressures. Check toe-in.
	Tighten wheel nuts to specified torque.

Interior of Vehicle

	Operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Neutral safety switch and transmissions parking pawl.
	Heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Operation of all lights, including turn signals; C/A headlamp aim.
	Inspect body trim and instrument panel; touch-up paint as necessary.
	Fit of floor mats and completely clean the interior of the vehicle.
	Station Wagon Only — Check rear seat movement and lock operation.

Exterior of Vehicle

	Wash vehicle, check paint, brush touch-up and minor repair as necessary and polish.

Road Test

	Operation of seat belt emergency locking retractors. Road test for engine, braking, and steering performance, operation of Air Conditioning (where fitted), rattles and squeaks, and correct if necessary.
	Steering wheel spoke position.
	Vehicles fitted with Automatic Transmission — check shift pattern. Manual Transmission — check gear shift operation.
	Clean steering wheel and control levers.
	Check Tool and Jack stowage.

Mechanic's Signature..... Date.....

Delivery Certificate

The dealer has completed the vehicle identification certificate, and has explained to the purchaser the terms and conditions of the General Motors-Holden's Sales Pty. Ltd., new vehicle warranty and notices and the contents of the owner's handbook. The dealer has informed the purchaser of his responsibility in respect of vehicle maintenance.

The dealer has demonstrated to the purchaser the operation of the vehicle and of all options and accessories.

The purchaser has been informed in writing of the fitting of any and all equipment or accessories not marketed by GMH or an affiliated company, and of any alterations or modifications which have been made to the vehicle and the effect on the GMH sales new vehicle warranty of such fitting, alteration or modification.

The purchaser has inspected the vehicle and acknowledges its delivery in accordance with this delivery procedure.

Purchaser's Signature ..... Date .....

Delivered by: Signature ..... Date .....

Owner's Name Mr. Mrs Miss .....

Address .....

Town & State ..... Postcode .....

Reg. No. ..... Model Name .....

V.I.N. ..... Eng. No. .....

To ensure continued interest in your vehicle, GMH requests that subsequent owners (not original purchaser) fill in and mail one of the attached.

Subsequent Owner Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss .....

Address .....

Town ..... Phone .....

State & Postcode .....

Reg. No. .....

Vehicle Identification Number (V.I.N.) .....

(Refer Specifications Section of this Manual for location)

Subsequent Owner Vehicle Identification Certificate

Owner's Name Mr. Mrs. Miss .....

Address .....

Town ..... Phone .....

State & Postcode .....

Reg. No. .....

Vehicle Identification Number (V.I.N.) .....

(Refer Specifications Section of this Manual for location)

Place in an envelope and mail to:

The Manager — Warranty Administration,
Service Department,
General Motors—Holden's Sales Pty. Limited,
Box 548D, G.P.O.,
Melbourne,
Victoria. 3001.

Place in an envelope and mail to:

The Manager — Warranty Administration,
Service Department,
General Motors—Holden's Sales Pty. Limited,
Box 548D, G.P.O.,
Melbourne,
Victoria. 3001.

1 Month — 1500 Kilometre Inspection & Adjustment

This coupon should not be removed until the vehicle is presented for service.

Owner's Name Mr. Mrs. Miss .....

Address .....

Town & State ..... Postcode.....

Reg. No..... Model Name.....

V.I.N. ..... Eng. No. .....

Selling Dealer's Stamp & Signature.....

Date of Acquisition.....

This vehicle has been thoroughly checked in accordance with the schedule on the reverse side of this coupon.

Servicing Dealer .....

Town ..... State.....

Owner's Signature .....

NOTE: At 1500 km, the Cylinder Head attachments must be retightened to specified torque to compensate for early life settling of the Cylinder Head Gasket. This operation must be performed while the engine is cold, and is best performed after overnight cooldown. Your Servicing Dealer will recommend that your Gemini be left overnight to allow the work to be performed as recommended.

1 Month — 1500 Kilometre Inspection and Adjustment

This vehicle has been thoroughly checked in accordance with the **1** month — **1,500** kilometre inspection and adjustment.

Dealer.....

Service Manager's Signature .....

Date..... Odometer Reading.....

1 Month — 1500 Kilometre Inspection and Adjustment

Under Hood Operations
Change Engine Oil.
Check all Fluid Levels accessible in Engine Compartment.
Check Air Cleaner Element for Restriction under Extreme Dusty Conditions.
Check all Hose Clips in Engine Compartment. (Use Torque Wrench where applicable.)
Check Distributor Cam Dwell and Timing, Engine Idle Speed and Fast Idle Speed on Choke Cam. Adjust if necessary.
Check Condition and Tension of all Engine Drive Belts — using Tension Gauge.
Check and Adjust Hood Lock and Safety Catch and Lubricate.
With Engine cold tighten the cylinder head bolts to the specified torque.
With Engine at normal operating temperature check torque of the manifold nuts and adjust valve lash.
Replace Oil Filter — Diesel only.
Under Vehicle Operations
Lubricate Front Suspension, (Ball and Steering Joints — where applicable).
Check Transmission and Rear Axle Oil levels.
Inspect all Brake Line Connections and Hoses for Leakage and Clearance.
Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
Check Steering Connections.
(Manual Transmission Only) Check and Adjust Clutch Fork Operating Rod. Free Travel.
Interior Vehicle Operations
Check operation of Instruments, Lights, Turn Signals, Horn, Windshield Wipers and Washers, Seat Belts, Seat Adjustment Mechanisms and Mirrors.
Check Operation of Parking Brake.
Station Wagon Only — Check rear seat movement and lock operation.
Exterior Vehicle Operations
Check Headlamp Aim. Adjust if necessary
Check Door and Boot, Lock Operation, Striker Plates, Handles, etc. and Lubricate.
Road Test Programme
All Rattles, Squeaks, Vibrations and Noises should be checked and rectified.
Check operation of vehicle on the road for efficient operation of Brakes, Steering, Engine Response, Transmission Operation and Gear Selection or Shift Pattern.

This Inspection and Adjustment will be carried out without charge to the owner except for any lubricants used. The Designated Servicing Programme is not to be exceeded without the Owner's prior agreement to additional servicing charges.

6 Months or 10,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

6 Months — 10,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake, coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Wipe inside of distributor cap.
†	Check injection pressure and spraying condition
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Check automatic choke for free operation.
	Check accelerator controls for interference, binding or damage.
*	Check torque of carburettor mounting bolts. Check operation of EGR valve, where fitted.
	Clean radiator core — check for blockages.
	Pressure test cooling system.
*	Air Conditioning Only — Repeat pre-delivery check as outlined in HQ Service Manual. Air Conditioning Section, Page 33.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only— Drain and refill.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.

†*Diesel only.*

A Service

P.T.O.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates. Hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

Additional Service—refer page 145.

12 Months — 20,000 Kilometre Service

	Under Hood Operations
	Change engine oil
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
†	Replace oil filter.
†	Check steering box for grease leakage.
†	Check timing belt.
†	Replace fuel filter.
†	Check injection pressure and spraying condition.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Check torque of manifold mounting bolts, cylinder head bolts and rocker shaft nuts. Check valve lash.
	Lubricate distributor. Check condition of cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs and distributor points.
*	EGR System Only — Clean valve and manifold opening.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Auto Choke — Check choke for free operation. Check and adjust if necessary choke settings. Check and adjust if necessary fast idle speed on choke cam.
	Check and adjust if necessary engine idle speed.
	Check accelerator controls for interference, binding or damage.
	Manual Transmission Only — Check clutch outer cable (upper) setting for operating clearance. Adjust if necessary.
	Clean radiator core — check for blockages.
	Drain and refill cooling system and recharge with inhibitor. Pressure test system.
*	Air Conditioning Only — Inspect condenser to ensure that it is not plugged with leaves or other foreign material. Check evaporator drain tube for dirt and other restrictions. Inspect flexible hose lines for leaks and brittleness. Check sight glass for sufficient R-12 charge.
	Under Vehicle Operations
	Change enginer oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.

†*Diesel only.*

B Service

	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Lubricate brake and clutch pedal springs, clutch bushing and clevis pin, as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.
*	Inspect front wheel bearings and check adjustment. Repack only if necessary.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

*Additional Service—refer page 145.

18 Months or 30,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

18 Months — 30,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Wipe inside of distributor cap.
†	Check injection pressure and spraying condition.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Check automatic choke for free operation.
	Check accelerator controls for interference, binding or damage.
	Clean radiator core — check for blockages.
	Pressure test cooling system.
*	Air Conditioning Only — Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.

†*Diesel only.*

A Service

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

*Additional Service—refer page 145.

24 Months — 40,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
†	Check injection pressure and spraying condition.
†	Replace oil filter.
†	Check steering box for grease leakage.
†	Check timing belt.
†	Replace fuel filter.
†	Adjust valve clearance.
†	Check tightening torque of manifold mounting nuts and cylinder head bolts.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Check torque of manifold mounting bolts, cylinder head bolts and rocker shaft nuts. Check valve lash.
*	Lubricate distributor. Check condition of cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs and distributor points.
*	EGR System Only — Clean valve and manifold opening.
	Replace air cleaner element if not yet changed in previous 24/40 period.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Auto Choke — Check choke for free operation. Check and adjust if necessary choke settings. Check and adjust if necessary fast idle speed on choke cam.
	Check and adjust if necessary engine idle speed.
	Check accelerator controls for interference, binding or damage.
	Manual Transmission Only — Check clutch outer cable (upper) setting for operating clearance. Adjust if necessary.
	Clean radiator core — check for blockages.
	Drain and refill cooling system and recharge with inhibitor. Pressure test system.
*	Air Conditioning Only — Inspect condenser to ensure that it is not plugged with leaves or other foreign material. Check evaporator drain tube for dirt and other restrictions. Inspect flexible hose lines for leaks and brittleness. Check sight glass for sufficient R-12 charge.
	Evaporative control system. Check all fuel and vapour lines and hoses for proper connections and correct routing as well as condition. Replace damaged or deteriorated parts as necessary. Ensure control valve is clear and operative.
	Replace all cooling system hoses.

†*Diesel Only.*

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Change oil.
*	Auto Transmission Only — Drain and refill fluid, adjust band and clean filter.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Lubricate brake and clutch pedal springs, clutch bushing and clevis pin, as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and amage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.
	Repack front wheel bearings.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.
	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.
	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

*Additional Service—refer page 145.
†*Diesel Only.*

A SERVICE

30 Months or 50,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

30 Months — 50,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
†	Check injection pressure and spraying condition.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Wipe inside of distributor cap.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Check automatic choke for free operation.
	Check accelerator controls for interference, binding or damage.
	Clean radiator core — check for blockages.
	Pressure test cooling system.
*	Air Conditioning Only — Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.

†*Diesel only.*

P.T.O.

A Service

	Interior Vehicle Operations
	Check operation of all warning indicators, ition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiences observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates. Hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

**Additional Service—refer page 145.*
†Diesel Only.

36 Months — 60,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
†	Check injection pressure and spraying condition.
†	Replace oil filter.
†	Check steering box for grease leakage.
†	Check timing belt.
†	Replace fuel filter.
	Check torque of manifold mounting bolts, cylinder head bolts and rocker shaft nuts. Check valve lash.
	Lubricate distributor. Check condition of cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs and distributor points.
*	EGR System Only — Clean valve and manifold opening.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Auto Choke — Check choke for free operation. Check and adjust if necessary choke settings. Check and adjust if necessary fast idle speed on choke cam.
	Check and adjust if necessary engine idle speed.
	Check accelerator controls for interference, binding or damage.
	Manual Transmission Only — Check clutch outer cable (upper) setting for operating clearance. Adjust if necessary.
	Clean radiator core — check for blockages.
	Drain and refill cooling system and recharge with inhibitor. Pressure test system.
*	Air Conditioning Only — Inspect condenser to ensure that it is not plugged with leaves or other foreign material. Check evaporator drain tube for dirt and other restrictions. Inspect flexible hose lines for leaks and brittleness. Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.

†*Diesel only.*

	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Lubricate brake and clutch pedal springs, clutch bushing and clevis pin, as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.
*	Inspect front wheel bearings and check adjustment. Repack only if necessary.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.

Interior Vehicle Operations

	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

Exterior Vehicle Operations

	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

**Additional Service—refer page 145.*
†*Diesel Only.*

42 Months or 70,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

42 Months — 70,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
	Wipe inside of distributor cap.
†	Check injection pressure and spraying condition.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Check automatic choke for free operation.
	Check accelerator controls for interference, binding or damage.
	Clean radiator core — check for blockages.
	Pressure test cooling system.
*	Air Conditioning Only — Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.

†*Diesel only.*

A Service

P.T.O.

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiences observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates. Hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

**Additional Service—refer page 145.*
†*Diesel Only.*

Dealer .....

Date .....

Odometer .....

Signed .....

48 Months — 80,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
†	Check injection pressure and spraying condition.
†	Replace oil filter.
†	Check steering box for grease leakage.
†	Replace timing belt.
†	Replace fuel filter.
†	Adjust valve clearance.
†	Check tightening torque of manifold mounting nuts and cylinder head bolts.
	Check torque of manifold mounting bolts, cylinder head bolts and rocker shaft nuts. Check valve lash.
	Lubricate distributor. Check condition of cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs and distributor points.
*	EGR System Only — Clean valve and manifold opening.
	Replace air cleaner element if not yet changed in previous 24/40 period.
	Check operating and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Auto Choke — Check choke for free operation. Check and adjust if necessary choke settings. Check and adjust if necessary fast idle speed on choke cam.
	Check and adjust if necessary engine idle speed.
	Check accelerator controls for interference, binding or damage.
	Manual Transmission Only — Check clutch outer cable (upper) setting for operating clearance. Adjust if necessary.
	Clean radiator core — check for blockages.
	Drain and refill cooling system, and recharge with inhibitor. Pressure test system.
*	Air Conditioning Only — Inspect condenser to ensure that it is not plugged with leaves or other foreign material. Check evaporator drain tube for dirt and other restrictions. Inspect flexible hose lines for leaks and brittleness. Check sight glass for sufficient R-12 charge.
	Evaporative control system. Check all fuel and vapour lines and hoses for proper connections and correct routing as well as condition. Replace damaged or deteriorated parts as necessary. Ensure control valve is clear and operative.
	Replace all cooling system hoses.
	Under Vehicle Operations
	Change engine oil filter.

†Diesel only.

Service

	Manual Transmission Only — Change oil.
†	Lubricate chassis.
*	Auto Transmission Only — Drain and refill fluid, adjust band and clean filter.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Inspect steering gear, linkage and dust covers for wear and security. Notify owner of any deficiencies, including loss of steering preload, for immediate rectification.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Lubricate brake and clutch pedal springs, clutch bushing and clevis pin, as applicable.
*	Check parking brake operation and lubrication system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.
	Repack front wheel bearings.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.

Interior Vehicle Operations

	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

Exterior Vehicle Operations

	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

**Additional Service—refer page 145.*
†*Diesel Only.*

54 Months or 90,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

54 Months — 90,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
†	Check injection pressure and spraying condition.
	Wipe inside of distributor cap.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Check automatic choke for free operation.
	Check accelerator controls for interference, binding or damage.
	Clean radiator core — check for blockages.
	Pressure test cooling system.
*	Air Conditioning Only — Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.

†*Diesel only.*

A Service

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment locks as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

*Additional Service—refer page 145.
†*Diesel Only*.

60 Months — 100,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge.
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
†	Check injection pressure and spraying condition.
†	Replace oil filter.
†	Check steering box for grease leakage.
†	Check timing belt.
†	Replace fuel filter.
	Check torque of manifold mounting bolts, cylinder head bolts and rocker shaft nuts. Check valve lash.
	Lubricate distributor. Check condition of cap and rotor. Wipe inside of distributor cap. Check TVRS cables for resistance. Replace spark plugs and distributor points.
*	EGR System Only — Clean valve and manifold opening.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Auto Choke — Check choke for free operation. Check and adjust if necessary choke settings. Check and adjust if necessary fast idle speed on choke cam.
	Check and adjust if necessary engine idle speed.
	Check accelerator controls for interference, binding or damage.
	Manual Transmission Only — Check clutch outer cable (upper) setting for operating clearance. Adjust if necessary.
	Clean radiator core — check for blockages.
	Drain and refill cooling system and recharge with inhibitor. Pressure test system.
*	Air Conditioning Only — Inspect condenser to ensure that it is not plugged with leaves or other foreign material. Check evaporator drain tube for dirt and other restrictions. Inspect flexible hose lines for leaks and brittleness. Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.

†*Diesel only.*

	Lubricate accelerator, transmission shift and clutch linkages as applicable.
	Lubricate brake and clutch pedal springs, clutch bushing and clevis pin, as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.
*	Inspect front wheel bearings and check adjustment. Repack only if necessary.
	Inspect rear brake linings and drums for wear. Wipe off dust. Check self-adjusting mechanism and parking brake adjustment.

Interior Vehicle Operations

	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

Exterior Vehicle Operations

	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

**Additional Service—refer page 145.*
†*Diesel Only.*

66 Months or 110,000 km

Dealer .....

Date .....

Odometer .....

Signed .....

A SERVICE

66 Months — 110,000 Kilometre Service

	Under Hood Operations
	Change engine oil.
	Check all fluid levels accessible in engine compartment, e.g. brake coolant, washer, battery electrolyte, auto transmission.
*	Inspect condition and adjust tension of all engine drive belts. Adjust if necessary using gauge
	Inspect condition and attachment of all hoses in engine compartment, including all emission systems pipes and connections.
†	Check injection pressure and spraying condition.
	Wipe inside of distributor cap.
*	Inspect engine air cleaner element for restriction and condition. Replace if necessary after testing.
	Check operation and setting of idle stop solenoid.
	Check operation of bimetal control valve in hot idle compensator system.
	Check automatic choke for free operation.
	Check accelerator controls for interference, binding or damage.
	Clean radiator core — check for blockages.
	Pressure test cooling system.
*	Air Conditioning Only — Check sight glass for sufficient R-12 charge.

	Under Vehicle Operations
	Change engine oil filter.
	Manual Transmission Only — Check oil level.
	Check rear axle oil level.
	Inspect front suspension and steering joints. Check joint seals and covers for damage.
	Lubricate accelerator, transmission shift and clutch linkages as applicable.
*	Check parking brake operation and lubricate system. Adjust if necessary.
	Inspect exhaust system and adjacent body areas for open seams or damage. Inspect for leaks and damage — brake and fuel lines, shock absorbers and mountings.
	Inspect engine and transmission mountings.
	Check torque of rear suspension link attaching bolts.
	Check torque of propeller shaft flange bolts.
	Inspect tyres for irregular wear or damage and advise owner, if necessary, of any corrective maintenance required. Check inflation pressures and torque wheel nuts.
	Disc Brakes — Inspect pads for wear.

†*Diesel only.*

A Service

	Interior Vehicle Operations
	Check operation of all warning indicators, ignition steering lock, brake and park brake lights and interior electrical system items and controls. Check all internal lights.
	Check heating, ventilation and demisting system ducts are clear and operation is satisfactory and controls correctly adjusted.
	Seat belt inspection. Examine webbing condition, buckle operation and retractor mechanism function. Notify owner of any deficiencies observed for immediate rectification.
*	Station Wagon Only — Check rear seat movement and lock operation.

	Exterior Vehicle Operations
	Lubricate door handle pivots, door hinges, striker bolts or plates, hood lock and catch and luggage compartment lock as required.
	Check door drain holes and rocker sill vents for blockage using a blunt probe.
	Check operation of the vehicle on the road for even braking and steering, clutch and transmission operation and engine response. Check mirrors, seat adjustment and automatic transmission shift pattern.

**Additional Service—refer page 145.*
†Diesel Only.

Suggested Labour Times

For Work Performed During Maintenance Schedule Services

"A" SERVICE — BASIC SERVICE TIME — 1.3 HR.

"B" SERVICE — BASIC SERVICE TIME — 2.8 HR.

"C" SERVICE — BASIC SERVICE TIME — 3.9. HR.

THE OWNER WILL BE CHARGED FOR LUBRICATIONS AND MATERIALS USED PLUS LABOUR.
AT THE TIMES RECOMMENDED ABOVE.

ADDITIONS TO BASIC SERVICE

The service times above are for service to a basic vehicle.

Additional time and material required for servicing optional equipment fitted to a basic vehicle must be added to the suggested labour time and charges.

The repairing or replacing of any part found faulty during a service check and not covered by GMH Warranty will be added to the charges.

WHERE ANY DEFICIENCIES ARE NOTED SUCH ITEMS SHOULD BE REPORTED TO THE OWNER/OPERATOR SO THAT THE EXTRA WORK REQUIRED CAN BE AUTHORISED.

***ADDITIONAL SERVICES & TIMES WHERE APPLICABLE:**

FIRST "A" SERVICE	0.1 HR.
PARKING BRAKE ADJUSTMENT	0.1 HR.
AIR CONDITIONING — 1st "A" SERVICE	0.1 HR.
AIR CONDITIONING INSPECTION	0.1 HR.
AUTO TRANSMISSION "C" SERVICE	0.6 HR.
ENGINE OIL FILTER REMOVAL — AIR CONDITIONING FITTED	0.2 HR.
EGR SYSTEM CHECK "B" SERVICE	0.2 HR.
FRONT WHEEL BEARING REPACK — "B" SERVICE	0.5 HR.
DIESEL ENGINE A, B & C SERVICE	0.6 HR.

Index

A

Accelerator Pedal 38
Air Cleaner 106
Anti-Freeze Fluid 105
Anti-Theft Ignition/Steering Lock 30
Appearance Care 93
Ash Tray 95
Authorised Dealers 73-83
Automatic Transmission 36, 37, 104

B

Back-Up Lamps 34, 36
Battery Maintenance 106
Bearings—Front Wheel 108
Before Driving Your Vehicle 16
Brake
—Disc 38
—Drum 38
—Dual Circuit System 38
—Fluid 108
—Master Cylinder 106
—Parking 39
—Power Assisted Note 38
—Warning Indicator 46
Bulb—replacement 92
—Specifications 91

C

Capacities—fluid 87, 89
Carbon Monoxide Warning 29
Caravan Towing 62, 63
Child's & Infant Restraints 27, 28
Cigarette Lighter 41
Clearance & Settings 88, 89
Cleaning
—Exterior 95
—Interior 94
Clock 45
Clutch Pedal 39
Controls
—Floor 38
—Instrument Panels 40, 42
—Steering Column 30-31
34-37
Cooling System
—Anti-Freeze 105
—Capacity 87-89
—Rust Protection 105
—Draining & Flushing 105
—Filling 105
—Radiator Cap 87, 89, 105

D

Dealer List 73-83
Demister/Heater 47-49
Diesel—
—Cleanliness 4-7
—How it Works 8-10
—Preheating 10
—Fuel Economy 11-13
—Starting 33
—Indicator Lamps 46
—Emergency 60
Delivery Certificate 120
Dimensions—Vehicle 88
Distributor—Settings 88
Door Controls 17-18

E

Emergency Conditions 55-60
—Emergency Starting 55-60
—Radiator Pressure Cap 87-89
—Towing Disabled Vehicle 64
Emission Control Systems 66-71
Engine Oil
—Capacity 87, 89
—Change Intervals 101
—Consumption 100
—Filter 100
—Level 100-104
—Pressure Indicator 44
—Transmission 104
—Viscosity Grades 102

Engine Data 87, 89
—Serial Number 85
Exhaust Gas Warning 14
Exhaust Pollution 14

F

Fuel
—Capacity 87, 89
—Economy 11-13
—Filler Cap 18
—Gauge 44
—Requirements 3
Fumes
—Exhaust 29
Fuse System 90

G

Generator Indicator Light 44, 46
Gauges 44, 46

H

Headlamps 91
—Replacement 92
Heater Demister 47-49
High Beam Indicator Light 44, 46
Horns 31

I

Identification Number 85, 86
Indicator Lights 43
Instrument Dials etc. 44
Instrument Panel 43-46
Instrument Panel Lights 43-45

J

Jacking Instructions 58

K

Keys 17-18

L

Loading Information 63
Locks
—Doors 17
—Ignition/Steering Lock 30
—Glove Compartment 18
—Luggage Compartment 19
—Fuel Filler Locking Cap 18
Loose Load and Articles 15
Lubricants 108

M

Manual Transmission 34-35
Maintenance Certificates 121-144
Maintenance Plan 117-118
Mirrors 20
Model Identification 87-89

O

Oil-Engine—see Engine Oil
Oil Pressure Indicator Light 46
Over Heating 59
Owner Relations 73
Owner's Responsibility 113

P

Parking Brake 39
Power Assisted Brake Note 38
Pre-Delivery 119

R

Radiator Pressure Cap 87-89, 105
Radio 50-54
Rear Vision Mirrors 20
Running In 3

S

Safety Checklist 16
Seat Adjustments 21
Seat Belts
—General Notes 23
—Infant & Child Restraints 26-27
—Lap/Sash Combination 24
—Lap Type 24
Serial Numbers 85, 86
Service & Maintenance 111
—Air Cleaner 106
—Auto-trans. Fluid 108
—Recommendations 116
—Battery 106
—Cooling System 105
—Engine Oil Change Intervals 101
—Engine Oil Consumption 100
—Engine Oil Filter 100
—Engine Oil Level 100
—Engine Oil Viscosity Grades 102-3
—Fuel Consumption 4
—Fuel Requirements 3
—Lubricants 108
—Tyres 109-110
—Vehicle Loading Information 63
Spark Plug—Setting 88
Specifications 85-95
Speedometer and Odometer 43
Starting and Driving 32, 33

T

Tape Player 52
Temperature Gauge 44, 46
Towing 61-63
Trailer (Caravan) Hauling 62, 63
—Permissible Operating Loads 63
Transmission Oil 104
Transmission Operating 34-37
—Automatic 36, 37
—Manual 34-35
Turn Signal
—Indication Lights 44
—Operation 30
Tyres 109-110

V

Valve Clearance 88, 89
Vehicle Serial Number 85
Ventilation Systems 47-49

W

Wagon Seats 23
Warning Indicators 46
Warranty Certificate I.F.C.†
Wheel Bearing—Front 108
Wheel
—Changing 55-59
—Nut Tightening Sequence 58
—Spare Wheel Stowage Sedan 55
Wagon & Van 56
—Trim Removal 57
Window Controls 21
Windshield
—Wipers and Washers 30

Z

GMH Zone Offices 74

†Inside Front Cover.

NOTES

NOTES

Service Station Checklist

This checklist is a summary of detailed information contained elsewhere in the Handbook.

- **Fuel:**
  Petrol: Your Gemini is designed to operated on 89 octane rating fuel (Standard). The fuel tank holds 52 litres.
  Diesel: If your Gemini is equipped with a Diesel engine use a Diesel fuel of 45 cetane rating minimum.
  Refer page 3.
- **Bonnet Release:** Pull the T lever under the right side of the dash. The bonnet will automatically release. To fully open lift the safety catch lever located underneath the front edge of the bonnet, slightly to the passenger side of centre, raise the bonnet, unclip the stay rod and place in the locating hole for support. To close—free the stay rod and replace in the retaining clip, lower the bonnet and press down firmly until the lock is engaged.
- **Engine Oil:** Check oil level and maintain at level indicated by checked area on dipstick.
  Refer pages 100-103.
- **Radiator Coolant Level:** Check at least weekly. Maintain level at 1 cm below bottom of filler neck.
  Refer page 105. (Overheating page 59).
- **Battery:** Check electrolyte fluid level (where applicable).
  Refer page 106.
- **Windshield Washer:** Check reservoir fluid level and top up as required.
- **Tyre Pressures:** Check pressures weekly and maintain as specified on the chart found inside the glove box lid.
  Refer page 109-110.

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ACCIDENTS

All motorists are advised to learn what to do at the scene of an accident, particularly where persons are injured.
Injured people can choke to death if their air passages are not cleared. They can bleed to death unless the bleeding is stopped. They may require mouth-to-mouth resuscitation, may have to be moved, even though badly injured. It is important that you understand how to avoid further damaging an injured neck or back or other broken limbs.
The following notes may help.

- **Part 1. Accident—being involved.**
- **Part 2. Accident—being a witness.**
- **Part 3. Medical assistance.**

Part 1. Accident—being involved

If you are involved in an accident you are advised to do as follows:

Stop immediately.

Remember that time is vital. Remain calm and alert. Think quickly and clearly.

Give all possible assistance to all injured persons. (See Part 3 Medical Assistance.)

Send for police and ambulance if anyone has been injured. Send information as accurately as possible. Give the exact location, the number of injured people and a brief report on the overall situation.

Perhaps take charge of the situation.

Warn all other traffic approaching the scene. Turn off ignition switches. Stop any smoking near spilt petrol. In darkness, try and light up the area to warn others.

Clear the road of accident debris.

Exchange your name, address, vehicle registration number and the vehicle owner's name and address with the other parties involved in the accident.

If damage to property only has occurred, report the facts to the owner of the damaged property or to his or her representative; to any police present at the scene or to the nearest Police Station.

Try and note all important facts because such details may be important if needed later.

Part 2. Accident—being a witness

If you witness a road accident or it becomes your task to stop and help at the scene of an accident, do this:
Keep in mind that an observant witness can prove most helpful. Some day you yourself might be very glad of help from a witness.
DO NOT stop at the scene of an accident *just to be a spectator.*
Where other people are already in attendance and giving assistance, **you should stop only if you can contribute assistance.**
Give what assistance you can to any injured persons. (See Part 3 Medical Assistance.)
Follow most of the steps suggested in Part 1. Perhaps you may have to take charge of the accident situation.

Part 3. Medical Assistance

Keep calm and think clearly.

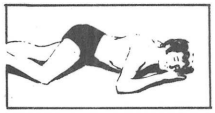
Your experience may not be much but do your best. Don't just stand by and let an injured person die.

• Look after the unconscious person first. Check for breathing. If no breathing, then check if air passages are clear, i.e. nose and mouth. Use your fingers to clear air passages if necessary. If the air way is clear then mouth-to-mouth resuscitation may be needed at once.

Unconscious people can choke.
Carefully turn to one side.
Tilt the head back slightly.
Wipe out the mouth with your finger to remove blood, vomit, broken teeth or dentures.

• You must be most careful in moving an injured person. Often it is best not to move at all but, in conditions of danger, that is not always possible. Serious and permanent damage can be done to an injured neck or back if not supported during movement. NEVER BEND A NECK OR BACK. KEEP THEM STRAIGHT. All injured limbs require support when an injured person has to be moved.

• Provided it is not dangerous to do so because of other injuries, an unconscious person will do best in the "coma position" illustrated here.



Lay the person on one side and—if it will not aggravate any injuries —then: Bend the uppermost knee until the thigh is at right angle to body.
Bend the uppermost arm and elbow so that the hand lies near the face.
Gently pull the underneath arm so that it rests straight on the ground free of any body weight.

• Try to stop bleeding by applying direct pressure, using your hands, or by pressing torn flesh together. Use any clean cloth available. Fold cloths to make pads. If necessary, press one pad on top of another. Keep pressure around edges of a wound BUT NEVER USE A TOURNIQUET.

Shock may be treated by reassurance, relieving pain, controlling any bleeding and keeping the injured person warm *but not hot.* Best not to give any fluids and NEVER ALCOHOL.

• If the injured person is in danger and has to be moved, try and have three or four people help and concentrate on not bending the neck, spine and injured limbs. **Keeping the neck and spine straight is most important.**

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